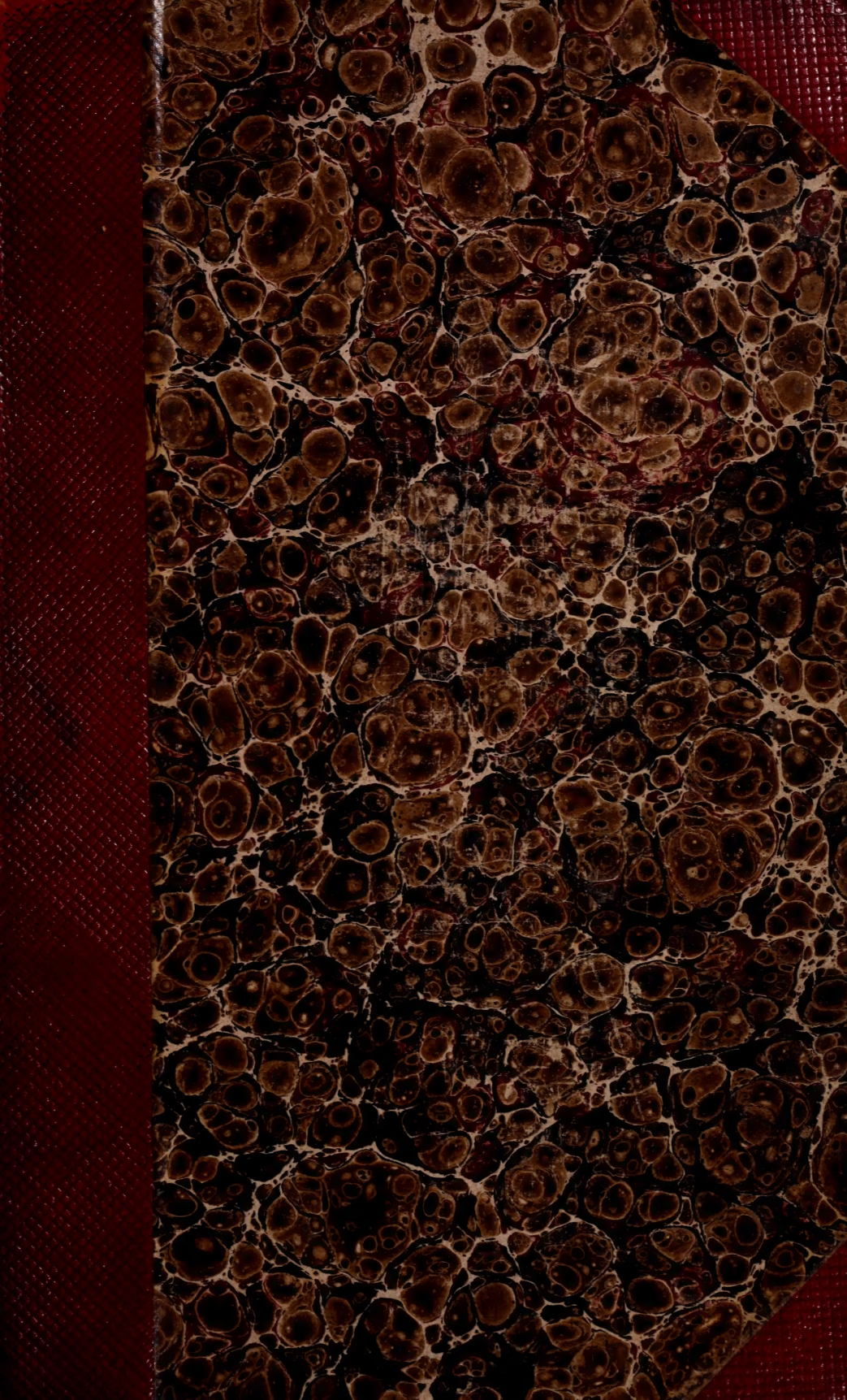
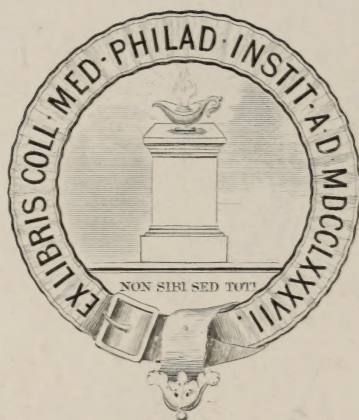




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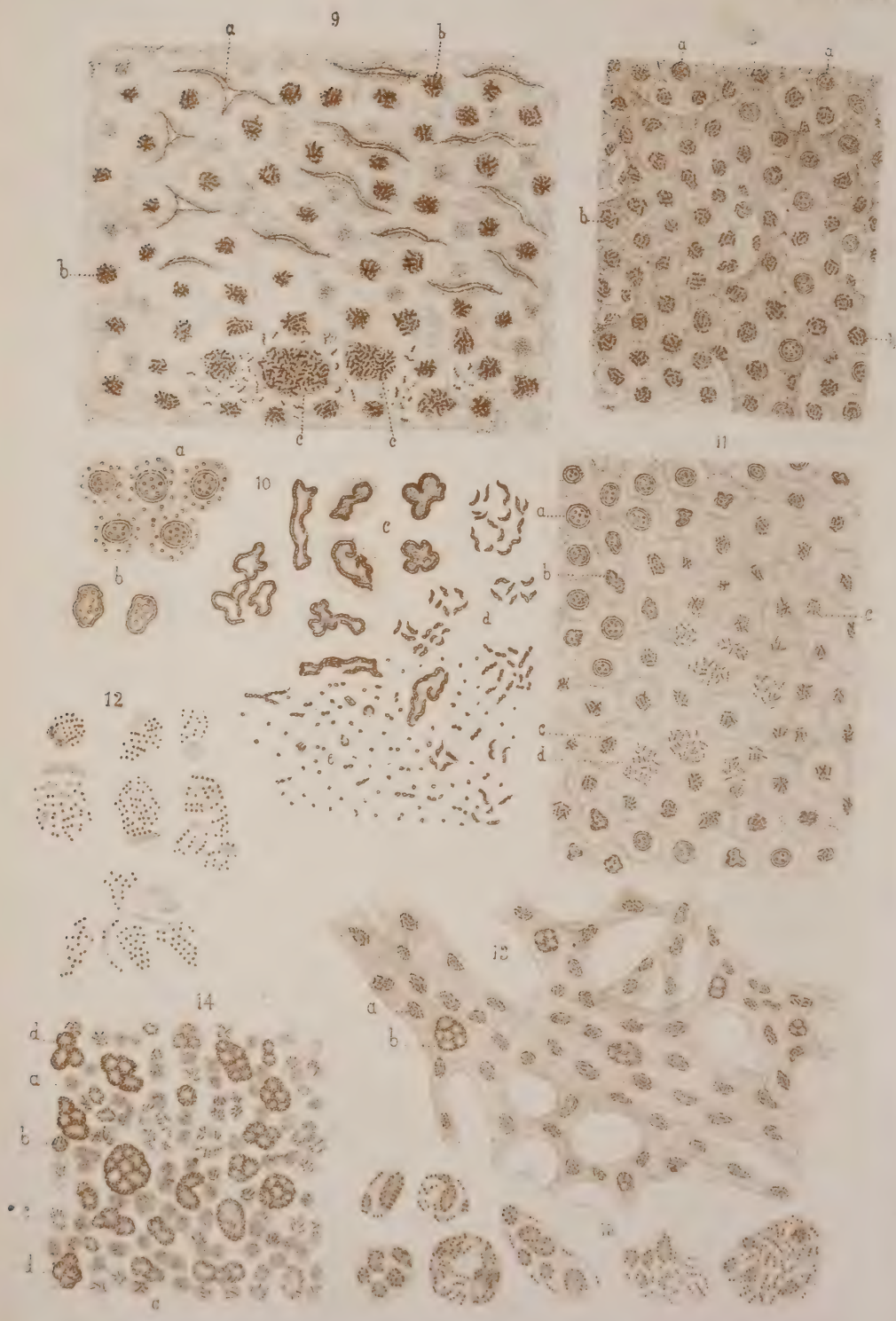
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ORIGINAL COMMUNICATIONS.

V.

THE RELATIONSHIP OF THE BACTERIUM TUBERCULOSIS TO THE TUBERCLES OF THE HUMAN LUNGS AND OTHER ORGANS.

The bacterium tuberculosis does not present itself in the same form, or in the same stage of development, in all portions of tuberculous lung, or even in all forms of tubercle. On the contrary, its development depends to a certain extent on the particular development, degeneration, and death of the tubercular growth. Greatest in number and highest in form of development, the organism is generally met with in tubercles which have very slowly and completely undergone the coagulation necrosis, and in which the outlines of the tubercle cells, as well as those of their nuclei, have disappeared. Such tubercles are generally met with in the lungs of cases of chronic tuberculosis. In some of these tubercles the bacteria tuberculosis are met with, embedded in the degenerated tissue, in very large numbers, whilst in others

they are not so numerous. They are always found to lie in groups of four or five, or even more individuals, in the same way as they are frequently met with in the tuberculous expectorations. The morphological characters of the bacteria contained in these tubercles are the same exhibited by those already described and met with in tuberculous sputum. In examining microscopically thin sections of tuberculous tissue, containing very numerous bacteria tuberculosis, only a certain number of them can be at one and the same time brought into focus and distinctly seen in their proper outlines; the rest, being embedded more deeply in the tissue, and out of focus, will cause the tissue itself to appear as if stained by the same color, which in reality is not the case. Although the peculiar grouping of the bacteria tuberculosis has also been observed and mentioned by other authors, I have not, as yet, met with a satisfactory explanation for this phenomenon. It appears, therefore, that it is generally regarded as a matter of fact which needs no special explanation, if we simply regard the individuals, forming one group, as the descendants of that particular bacterium which, coming from the surrounding atmosphere, first entered the lungs during the act of respiration, to settle on the very spot in one or the other alveolus, where the group is found. And I must confess that in the beginning of these investigations, I entertained to a certain extent a similar view, until I made a certain observation, which explained to me the phenomenon of the bacteria tuberculosis appearing almost always in the form of groups, when met with in the tissues of the human organism. This observation I shall now describe.

In the latter part of the spring of 1883, after I had suc-

cessfully stained the bacterium tuberculosis in tuberculous expectorations, and in numerous thin sections made from different tuberculous lungs, and, while still testing different methods of staining, I observed in sections, stained with methyl violet, and decolored by alcohol, that, though no stained bacteria could be discovered in the section, a number of nuclei had retained some of the blue color, while the rest of these bodies had given it up. At the same time, I noticed in the interior of these nuclei several granular bodies of a slightly deeper stain. Regarding these stained nuclei as having been formed more recently than those unstained, and the bodies which they contained as their ordinary, legitimate granules, I attached no particular importance to this observation. Some time afterward, however, when again examining sections, made from the lungs of a case of typical miliary tuberculosis, and stained by Gibbes' method, first with magenta and then with chrysoidine, I observed the same phenomenon, though more distinctly than before. In these sections, in which the tubercles were comparatively small, and in which no bacteria tuberculosis whatever could be discovered in their cheesy degenerated centres, I observed a number of deeply stained granules, as well as granular filaments, in the interior of the nuclei of the tubercle-cells occupying the periphery of the tubercle. Whilst these bodies, which in every respect resembled bacteria, were deeply stained by the purplish blue of the magenta, the protoplasm of the nucleus itself was stained yellow by the chrysoidine. This observation explained to me at once not only the cause of the peculiar grouping of the bacteria tuberculosis, as observed in the cheesy parts of the tubercles, but,

moreover, their true origin in the nuclei of the tubercle-cells, and also showed me the direction in which my investigations had to be further pursued. In examining other sections of the same lung, stained in the same manner, I then observed the same purplish blue bodies not only in the interior of the nuclei of the tubercle-cells, but also in the nuclei of all the cells contained in the different tissues of the bronchioles adjacent to tubercles; that is, in the nuclei of the connective tissue-cells of the mucous and fibrous coats (fig. 6 *a*) in those of the muscular fibre-cells (fig. 6 *b*) and even in those of the cartilage-cells contained in the minute cartilaginous plates of the bronchioles. I furthermore observed these bodies in the nuclei of the cells of the adventitia of some of the smaller arteries. By repeatedly observing this same phenomenon afterward in sections made from the tuberculous lungs of other cases, especially of miliary tuberculosis, I was, at last, convinced of the bacterial nature of these stained bodies within the nuclei of the bronchial walls; the more so as they were not observed in the nuclei of the walls of bronchioles not adjacent to tubercles, nor in those of the healthy parenchyma of the lungs. While these bodies were stained of a deep purple by the magenta, the protoplasm of the nuclei appeared stained more feebly by the same color, indicating that the latter were affected by some irritation, probably derived from the neighboring tubercle. In staining these sections with a second color, such as chrysoidine or Bismarck brown, it was absorbed by the protoplasm of the nuclei, while the bacteria within the latter kept their purple tint; only when exposed a comparatively long time to these second colors, the bacteria assumed a brownish tint, though much darker than that of the nuclear protoplasm.

The correctness of the observations just described, I found corroborated by the examination and study of a very considerable number of stained sections, taken not only from the lungs of cases of miliary, but also of chronic tuberculosis, and of tuberculous livers, spleens and lymphatic glands, in which the same well-stained granular bodies were always observed in the interior of the nuclei of those tubercle cells occupying the periphery of the tubercle. All that now remained to prove the bacterial nature of these bodies was to meet with such sections of tuberculous tissue in which not only the origin and development of the bacteria tuberculosis in or from the protoplasm of the nuclei, but also their liberation from the latter could be clearly demonstrated. By the close examination of numerous well stained sections of large miliary tubercles of the lungs, liver and spleen, or of such tubercles situated near the borders of the tuberculous portions of the lungs of cases of chronic tuberculosis, I succeeded, at last, in tracing in one and the same section the bacterium tuberculosis from its first appearance in the nuclei of the tubercle cells to its full development and its liberation from the degenerated nuclei in the cheesy centers of the tubercles. Specimens of tubercles in which the bacterium tuberculosis can be traced from its origin to its liberation are, for certain reasons, to be stated directly, not found in every tuberculous portion of lung, liver, etc., though they are often enough met with, especially if properly looked for, to furnish to every investigator ample opportunity to corroborate the correctness of my statements.

As far as I know from the current medical literature it has now been asserted by a number of investigators on the subject under discussion, that free bacteria tuberculosis *cannot be discovered in all tubercles*, and, moreover, that whenever

they are met with in tuberculous tissues, it is principally in that portion of tubercle, or tuberculous mass, in which the process of coagulation-necrosis is going on. My own observations not only corroborate the truth of the statements of these authors, but also enable me to furnish in the following pages the explanation for this phenomenon.

From my observations it appears that the development of the bacteria tuberculosis in the nuclei of the tubercle cells stands in a certain relationship with the degree or rapidity of the degenerative process taking place in the nuclei; in other words, the more rapid the course of the degenerative process,—not only of the nuclei but also of the protoplasm of the cells,—the smaller is the chance for the bacteria to reach their full development or maturity; whilst on the other hand, the more slowly this process proceeds, the more time will be afforded to these organisms for reaching their full development and their final liberation from the degenerated protoplasm of the nuclei.

The appearance of the bacteria in the nuclei is always preceded by a shriveling of the nuclear protoplasm, indicating that the degenerative process has commenced. The normally round outlines of the nucleus, then, become irregular, whilst its double contour appears darker and more prominent. With the advancing degeneration the irregularity of the outlines of the nucleus increases, whilst its margin, represented by the double contour, is breaking up, first into a few and then into more fragments, which are finally converted into a number of minute filaments of a granular or bead-like composition. In the course of the degenerative process the power of retaining aniline colors against decolorizing agents, such as nitric or formic acid, etc., increases in the margin of the nucleus, and in the fractions into

which it has broken up, in proportion to the degree of degeneration. It is thus that in thin sections of tuberculous tissue, stained with magenta, the irregular shriveled margins appear of a dark red, which ultimately, in the filamentous fragments changes into purple.

Whilst the above described changes are observed to take place in the protoplasm of the nuclei, that of the cells, of course, undergoes the same degeneration. Accordingly the bodies of the cells appear paler and paler, until finally their outlines can be no longer distinguished, their protoplasm having lost all power of absorbing coloring materials, and undergone the coagulation-necrosis. As far as I am able to judge, the degenerative process not only commences in the protoplasm of the cells, but runs there a more rapid course than in that of the nuclei. This is seen in examining the cheesy centres of miliary tubercles, in which no trace of the outlines of the cells can be discovered, while a number of shriveled nuclei, containing forms of more or less perfectly developed bacteria, or minute fragments of nuclei, are still met with. Judging, however, from the fact observed in these cases, that the remains of the protoplasm of these nuclei still present the yellow color of the chrysoidine, or Bismarck brown with which the section was lastly stained, whilst the bacteria show the purple of the magenta, it appears to me that the protoplasm of the nuclei never undergoes a perfect degeneration, as, otherwise, it would not have retained its capacity of absorbing coloring matters. It seems, therefore, more probable that the shriveling of the nucleus stands in some relation to the development of the bacteria, for the more fully the latter are developed, the more the nucleus shrivels; in other words, the protoplasm of the nucleus ap-

pears to be necessary and appropriated for the development and growth of the bacteria.

In referring to some of the illustrative figures, accompanying this treatise, the reader will be enabled to understand more fully my statements regarding the development of the bacteria tuberculosis in the nuclei of the tubercle cells. Let us begin with fig. 3, which represents a small part of the periphery of a miliary tubercle with several of the neighboring non-tuberculous alveoli magnified about 625 diameters. In this figure we recognize at *a* the shriveled nuclei containing more or less developed bacteria tuberculosis, at *b* the epithelial cells of the non-tuberculous alveoli, and at *c* the interalveolar septa with the nuclei of their multiplied connective tissue-cells derived from the adventitia of their vessels, etc.; *d* represents a small portion of the periphery of the tubercle, while *e* represents a young tubercle which has arisen from a part of the wall of a large alveolus, or perhaps infundibular cavity, and which, contrary to the rule generally observed, has undergone the coagulation-necrosis at the periphery of the tubercle. The cheesy centre of the tubercle is situated toward the left and outside of the drawing. In proceeding with the examination of the anatomical elements represented in this figure from the right to the left side, we observe in the non-tuberculous alveoli, on the right side, already a number of nuclei which present the degenerative changes, above described, in their different degrees. Some of these nuclei are contained in the epithelial cells, while others appear to be located in the open spaces between these cells, occupied by the capillaries. From this it appears that the development of the bacteria tuberculosis not only takes place in the nuclei of the true tubercle cells, derived from the cells of connective tissue, but

also in those belonging to the cells, lining the alveolar walls, and which descend from the cells of the entoderma. The same phenomenon is observed in the liver as we shall see hereafter. Although no trace of tubercular growth is found in these alveoli bordering the tubercle, quite a number of nuclei containing developing bacteria are nevertheless already observed in the inter-alveolar septa. The changes observed in these nuclei are most probably caused by a morbid irritation, derived and radiating from the neighboring tubercle. In passing to the left of the figure we observe at *d* the periphery of the tubercle. Here, most of the nuclei of the tubercle cells contain bacteria tuberculosis in different stages of development; the shades between these nuclei represent others out of focus. Finally at *e* we observe in the young tubercle, having already undergone the coagulation-necrosis, still a number of nuclei containing bacteria, together with others already disintegrated, the remains of which are observed throughout the cheesy mass in the form of fragmentary granular bodies. Although in this minute cheesy tubercle bacteria tuberculosis are distinctly seen in the remaining nuclei of tubercle cells, none of these organisms are met with entirely liberated from the nuclear protoplasm, either single, or forming larger groups, or aggregated in masses. On the contrary, after having reached a certain degree of development, they degenerate, die and disintegrate with the anatomical elements of the tubercle. As this condition of things is mostly found to exist in the smallest tubercles of typical cases of miliary tuberculosis, it explains the fact, observed and stated by some authors, that *not all tubercles contain bacteria tuberculosis*, and that, whenever they are met with, it is generally in the cheesy matter of old tubercles. I have microscopically examined the

lungs of a fair number of cases of miliary tuberculosis, without even being able to discover free and fully developed bacteria tuberculosis in the smaller or younger tubercles of these organs; whenever they were met with, it was always in the older and larger tubercles. In the miliary tubercles of the liver and spleen, on the contrary, I have not unfrequently encountered them liberated from the nuclei, and fully developed; in these cases, however, the lungs always contained small cavities, showing that the course of the disease was rather protracted.

In directing now our attention to figure 4 which represents a portion of a small miliary tubercle near its cheesy centre, magnified about 1,090 diameters, we observe the same condition as in fig. 3, with the exception that the anatomical elements, being more highly magnified, are more distinctly recognized. As in the preceding figure, we observe at *a* the bacteria tuberculosis developing in the nuclei of the tubercle cells; the outlines of these cells are not seen, on account of the object being mounted in Canada balsam and illuminated very highly with Abbé's illuminating apparatus. At *b* the same nuclei are seen, but out of focus, while *c* represents the inter-alveolar septa. Finally at *d*, a portion of the cheesy centre of the tubercle is represented, in which the disintegration of the nuclei and bacteria tuberculosis is distinctly seen.

The degeneration of the nuclei and imperfect development of bacteria tuberculosis is equally well exhibited in figure 10, representing some of the anatomical elements of a miliary tubercle of the liver, magnified 1,090 diameters. In this figure, we observe at *a* a group of normal hepatic cells from near the border of the tubercle; *b* represents a pair of hepatic cells from the periphery of the tubercle, the nuclei of which have

commenced to shrivel, while at *c* a number of nuclei from the cheesy centre of the tubercle are exhibited, the margins of which are shriveled in a higher degree and broken up into fragments. Some of these nuclei are still surrounded by the degenerating protoplasm of their cells. At *d*, finally, the ultimate minute fragments of the nuclei are represented, some of which have assumed the form of granular filaments.

In the cheesy centres of the older and larger tubercles, or tuberculous masses, met with in the lungs of cases of chronic tuberculosis, as well as in those of the larger tubercles found in the organs of protracted cases of miliary tuberculosis—especially when accompanied by the formation of small cavities in the lungs—the bacteria tuberculosis become fully developed and are liberated from the remaining protoplasm of the nuclei by its final complete degeneration. Although the gradual development of these bacteria, from their first appearance in the nuclei of the tubercle cells to their final liberation, and to their aggregation in larger groups, or masses, is not seen in the sections of every one of these tubercles, there are, nevertheless, many specimens met with—especially when looked for in the examination of very numerous sections—in which the whole process may be observed in one and the same section. It is from such a specimen that figure 5 was copied. This figure, also magnified 1,090 diameters, represents a small portion of a large tubercle from the lungs of a boy, sixteen years old, and affected with miliary tuberculosis of the lungs, liver, spleen, kidneys, and lymphatic glands; the lungs, from which the section was taken, contained several small cavities. The tubercle, though it had undergone the coagulation-necrosis, showed no cavity in the centre. In this figure, as in the preceding, *a* represents the bacteria tubercu-

losis developing in the nuclei of the tubercle cells, and *b* the same out of focus. At the upper portion of the figure, the borders of two neighboring alveoli are recognized, while *c* very likely represents some degenerated interstitial connective tissue, leading to the central part of the tubercle. In the latter we observe at *d* the bacterial groups commencing to enlarge in their dimensions, while at *e* we find them aggregated into small masses. In the sections, the latter present a purplish blue appearance, caused by those bacteria being buried deeper in the tissue, and in consequence out of focus.

Though I am as yet unable to assert anything positive as to the exact manner in which these aggregations of bacteria tuberculosis are formed, I think that it may take place as follows: When the bacteria contained in one nucleus have reached their full development, they may be liberated by the complete degeneration and disintegration of whatever has remained of the protoplasm of this nucleus, and then multiply in the protoplasm of the body of the cell, provided it has as yet not completely undergone the necrotic process. I doubt not but that in this manner the groups of bacteria, originally contained in the nuclei, frequently grow in dimension, and that this mode of growth has given rise to the idea, generally entertained, of these organisms being contained in the protoplasm of the tubercle cells. The groups, represented at *d* of figure 5, may have grown in this way. The larger aggregations of bacteria, represented at *e*, may have been formed in the same manner, that is, by a complete necrosis and fusion of the protoplasm of a number of neighboring cells, together with a numerical increase of the bacteria contained in these cells or their nuclei. The formation of these aggregations or masses of bacteria tuberculosis in the manner just indicated is very probable, for

the reason that by a close microscopical examination the original groups, forming these masses, may in many instances be still recognized.

In some of the miliary tubercles of the liver the development of the bacteria tuberculosis in the nuclei of the cells as well as their liberation from the latter and their aggregation into small masses is frequently well exhibited in one and the same section. In the preceding division of this treatise I have already mentioned that the secreting elements of the liver, the hepatic cells, appear to take a part in the formation of the tubercle; at any rate, bacteria tuberculosis are observed to develop in the nuclei of these cells. To illustrate this fact let us examine figure 8, which has been copied from a section of the liver of the boy of sixteen years, above mentioned, and represents a small portion of the parenchyma of this organ, bordering directly the periphery of the miliary tubercle, magnified about 625 diameters. In this figure we observe a number of hepatic cells (*a*) the nuclei of which still present a normal appearance, whilst in others the degenerative changes of these bodies, with the gradual development of the bacteria tuberculosis (*b*), are distinctly seen. In passing over the figure 9, representing a portion of the centre of the tubercle which has undergone the coagulation-necrosis—also magnified 625 diameters,—we observe a number of fissures (*a*) in the section which, very likely, represent the contracted lumen of the capillaries. At (*b*) the individual groups of bacteria tuberculosis, with the remains of the protoplasm of the nuclei in which they have been developed are distinctly seen. In passing from the upper to the lower part of the figure the bacteria of these groups are observed to increase in number until at (*c*) they appear as smaller or larger aggregations.

During the course of the development of the bacteria tuberculosis in the nuclei of the tubercle cells they appear both in the form of cocci or diplococci and of filaments composed of three, or even four cocci. The latter appear generally curved, and frequently lie parallel with the periphery of the nucleus, so that in the beginning of their formation they might be mistaken for the double contour of this body. That this is not the case, however, is easily discovered by observing the granular fragments into which the contour is broken up. The single granules, or cocci, do not represent the normal granules contained in the nuclei, as might be thought; this is proved by their retaining the purple color of the magenta when subjected to the action of decolorizing agents, a property which the latter do not possess. Besides the normal granules of the nuclei occupy the interior and not the periphery of these bodies. But, as not all the nuclei of the tubercle cells contain bacteria, the difference between these organisms and the normal organic granules is easily recognized by the latter being stained, like their nuclei, with the second color of the section.

In sections made of tuberculous lung tissue bordering a smaller or larger cavity, the gradual development of the bacteria tuberculosis may also be frequently observed. In the tuberculous tissue, forming the walls of the cavities, which is generally more or less indurated, the bacteria may still be contained in the remains of the protoplasm of the nuclei, whilst at the very borders of the cavity, as well as in the layer of inspissated purulent matter, by which the latter is generally lined, groups of free bacteria may be met with. By the breaking down of the tuberculous tissue the bacteria get into the purulent matter contained in the cavity, and with this into the expectorations of the patient. Not in every instance, however,

are bacteria tuberculosis met with in the sections taken from the borders of pulmonary cavities, a circumstance which explains the fact of the occasional absence of these organisms from the expectorations of tuberculous patients.

The development of bacteria in the protoplasm of the nuclei of irritated and degenerating cells, however, is not only observed in tissues affected by tuberculosis, but also, as I shall show directly, in the neoplastic degenerating cells of organs affected by other diseases, such as leprosy, carcinoma, etc.

In the same manner as tuberculosis is characterized by the presence of the bacterium tuberculosis in the tubercles of the organs affected by this disease, leprosy is characterized by the so-called *Bacillus leprae*. This organism, though called a bacillus, presents itself still more distinctly in the form of very minute cocci than the bacterium tuberculosis. The chief difference found between the two organisms consists in the cocci of the bacterium of leprosy being smaller than those of the bacterium tuberculosis, as well as in the filaments formed by these cocci being almost always straight. With the view of closely investigating the morphological characters of the bacillus leprae, I amputated in the summer of 1883 the lobuli of the ears of two living leprous patients. The examinations made on the material thus obtained were not only confined to thin sections, but extended to the fresh blood oozing from the cut vessels, and to the matter scraped with a sharp knife from the freshly cut surface of the lobules. All the preparations were carefully stained by Gibbes' method with magenta and chrysoidine. In the matter scraped from the cut surface of the lobuli I met, as I had expected, with single leprous cells, detached from the connective tissue of the skin by the scraping process, which contained single cocci, diplococci, and filaments

composed of three or four cocci, representing the bacillus leprae.

In the stained preparations which I had carefully made of the blood oozing from the cut vessels of these lobuli, I discovered the same organisms, showing the morphological characters, above mentioned, still more distinctly than in the leprous cells. They were here observed attached in the form of groups to the colorless blood corpuscles, the number of which appeared to be abnormally increased. The protoplasm of most of these corpuscles had undergone degeneration and disintegration, the bacteria appearing liberated, or adhering to the remains of the likewise degenerated nuclei (fig. 12, magnified about 1090 diameters). Subsequently to this observation a number of other preparations were made of leprous blood, taken from different parts of the skin of three leprous patients by my young friend Dr. E. Laplace, at present sojourning in Paris, who was, at that time, the student assistant of the Pathological Department of the Charity Hospital. In all these preparations the same organisms were found, exhibiting the characters above described. Although a number of opportunities were offered to me, since that time, to examine the blood of other lepers, I neglected to do so for the want of time; until during the summer of 1885, when I again examined the blood taken from the arms of two other leprous patients, without meeting, however, with any bacteria contained in this fluid.

The same form of bacteria as those met with in the blood were observed in the protoplasm of the cells and their nuclei in the pus covering the healing surface of the ears, from which the lobuli had been cut. In the matter taken from a pustule of the skin of another leprous patient, a woman, the bacteria

were met with mostly in the form of granular filaments in the nuclei of the leucocytes.

In the sections, made from the amputated lobules of the ears, I found, likewise, the bacteria developing in the nuclei of the neoplastic cells. But, as many of the cells contained in such a section had undergone fatty degeneration, and, in consequence, were filled with a number of smaller or larger fat globules, whilst at the same time they contained quite a number of nuclei, formed from the original nucleus by the process of division—and which eventually undergo degeneration—a careful examination is required to clearly understand the exact location of the bacteria in the larger kind of these neoplastic cells. For this reason our attention should be directed to those cells, of which the protoplasm has as yet not undergone fatty degeneration, and in which the multiplication of the nuclei has not advanced too far. In these cells the bacteria will be seen developing in the nuclei (fig. 14, *a*, *b*, and *c*); and, when closely examined with a good homogeneous immersion objective of a sufficient magnifying power, and illuminated with very oblique light, they will show that they are composed of minute cocci, appearing in bas-relief-like minute beads, and exhibiting the character of a true *sphero*-bacterium. In consideration of this fact I do not hesitate to call hereafter the so-called *Bacillus leprae* by its proper name, the *bacterium leprae*.

In the latter part of the spring of 1884, another fair opportunity of investigating the morphological characters of the *bacterium leprae* was offered to me by the death of a severe case of leprosy at the Charity Hospital. The microscopical examination of the tissues of the lungs, liver, spleen, kidneys, epiglottis, etc., fully corroborated the correctness of my pre-

vious observations concerning the bacterium leprae. In the liver and spleen the development of these bacteria in the nuclei of the cells was particularly well exhibited, as will be seen by referring to figure 11. In this figure, which represents a small part of a thin section of the liver, stained by Gibbes' method, and magnified about 625 diameters, we observe at *a* the normal nucleus of a hepatic cell, while that of a neighboring cell, at *b*, shows the beginning of the degenerative process by the shriveling of its margins. In proceeding to *c*, we find the outlines of the nucleus obliterated and the bacteria leprae nearly developed; while finally at *d* they are seen completely liberated from the degenerated protoplasm of the nucleus and disseminated through the likewise degenerating protoplasm of the body of the cell.

Finally in the summer of 1885 I took occasion to convince myself once more of the correctness of my previous observations, by examining very thin sections made of a leprous tubercle cut from the arm of a living patient, and also stained by Gibbes' method. Small portions of one of these sections I have represented in figures 13, 14 and 15. The first of these (fig. 13) represents a minute portion of the pars reticularis of the corium of the skin from the very margin of the tubercle, where the pathological changes of the connective tissue cells are still in the incipient stage of the disease; it is magnified 625 diameters. In it, we observe a considerable number of the nuclei of these cells (*a*) distributed throughout the fragments of tissue containing bacteria leprae in their early stage of development. Of these cells, only a small number (*b*) are seen in an advanced stage of fatty degeneration with the fully developed bacteria leprae between the fat globules. In figure 14, which represents a minute part from the middle of the tubercle, and also

magnified about 625 diameters, the bacteria are seen in the different stages of their development. Thus at *a* their first appearance is noticed in the nuclei of the unchanged connective tissue cells, whilst at *b* they are slightly more developed. At *c* the nucleus has disappeared by degeneration, and the bacteria are seen fully developed in the protoplasm of the cell, exhibiting very distinctly their grander character. Finally at *d* they are, as before, met with fully developed between the flat globules of the degenerated cells. In figure 15, which represents a number of degenerated leprous cells, magnified about 1090 diameters, the morphological character of the bacteria leprae is still better recognized than in the preceding figures.

In order to ascertain whether, like in the nuclei of the cells of tuberculous and leprous tissues, bacteria would also develop in those of other morbid growths, I examined during the course of the above described investigation, the sections of quite a number of fresh tumors, or other neoplasms, stained by Gibbes' method. Although in the greater number of these specimens bacteria were not met with, I nevertheless found my suspicions verified in distinctly observing in four instances the development of these organisms in the nuclei of the neoplastic cells in the same manner as I have described it above. The first of these instances relates to a small lobulated tumor, about $\frac{5}{8}$ inch in diameter, a so-called polypus of the mucous membrane of the rectum, removed from very near the verge of the anus. In examining the sections of this tumor, I met in some places of the hyperplastic connective tissue a large number of cells the nuclei of which contained granular bodies resembling bacteria. That these bodies in reality represented bacteria, was proved

by their being intensely stained purple, or purplish blue, by the magenta, while the protoplasm of the nuclei was stained yellow by the Bismarck brown. They presented themselves mostly in the form of cocci, or diplococci, but there were also some filaments observed, composed of three cocci. The diameter of these organisms was about the same as that of the bacteria tuberculosis, though among them a number of single cocci of a still larger diameter were noticed. In the nuclei of a small number of the deeper cells of the epithelium covering this tumor, as well in some of the Lieberkuehn's glands, the same bacteria were met with. Although the sections of this tumor were made, stained and mounted in Canada-balsam in January, 1884, the bacteria were seen as distinctly as ever when re-examined in September, 1885, though the purplish blue of the magenta had faded into a dark red. The next specimen, in which I met with bacteria in the nuclei of the cells, was a carcinoma of the mammary gland. There they also appeared in the form of cocci and diplococci, but, as in the preceding case, only in certain places of the section. In both instances the bacteria were strictly confined to the protoplasm of the nuclei.

In the third specimen, however, representing a carcinoma of the stomach, the bacteria were observed to develop in the same manner as those in the nuclei of the cells of tuberculous or leprous tissues, that is, commencing with the shriveling of the nucleus, and the breaking up of the margin of this body into minute fragments, and terminating in the formation and liberation of granular filaments. In this case also, the bacteria were only met with in

certain localities of the section, especially in the cells of the fibrous coat of the organ. In the fourth morbid growth, representing a so-called endothelial cancer, the whole process of development could also be traced from the shriveling of the nucleus to the ultimate formation and liberation of the bacteria, which, in some places, were met with aggregated in the form of small groups. Some of these groups were formed by three or four filaments lying at certain angles toward one another; sometimes in the form of a circuit, resembling a ring broken into fragments, and corresponding in size to the nuclei in which they had developed. Most of the filaments were more or less bent or curved.

The bacteria met with in these two last neoplasms did not exhibit the deep purplish-blue, observed on the fully developed bacteria tuberculosis and leprae when stained with magenta, but rather a purplish red. This want of deepness in the stain was undoubtedly owing to their not having as yet reached their highest development. This same phenomenon is frequently observed during the development of the bacterium tuberculosis in the nuclei of the tubercle cells, as I have once mentioned before.

The results of my examinations of these four neoplasms then show, that the development of bacteria in the nuclei of certain cells does not exclusively take place in tuberculous and leprous tissues, but also in other morbid growths, whenever the special conditions required for their evolution are present. What these conditions are, would be difficult to determine at our present state of knowledge, though it is not improbable that they may be found in a certain form of degeneration of the elements of these tissues, such as the

coagulation-necrosis, which cannot be said to be confined to the tubercle of tuberculosis. The tumors, of which I stained sections for the purpose of discovering bacteria, though representing a fair number, are far from comprising all those which I examined during the course of these investigations, as, otherwise, the number of specimens in which bacteria were met with might, perhaps, have been larger. But as the time which I could spare for the search of bacteria in other than tuberculous and leprous tissues was rather limited, I confined my examinations only to specimens which presented certain phenomena of involution or decay, and contented myself with the four instances above mentioned.

A CASE OF AGOROPHOBIA. By A. K. VAN HORN, M. D.,
Yellow Creek, Illinois.

Strictly speaking, the above named disease denotes a fear of spaces, but it also includes the kindred mental condition of a strange unaccountable dread, or terror of being alone without being able to give any reason, or explanation of why the dread is felt. While certain phases of the affection seem to point to a purely mental origin, there are also somatic troubles at times, such as sudden weakness, and tremor of the muscles, with strange sensations in various parts of the body.

Agorophobia is not a newly discovered disease, the noted Pascal having suffered from it; but it was first described by Brück, a German, in 1832, under the title "Schwindel Angst." It seems, however, not to have been closely studied, or its symptoms classified until a few years ago. In

fact, opportunities for its investigation are infrequent, as the disease is rare. The majority of reported instances occurred in adult men of education, who mostly concealed their infirmity as long as possible, lest they should be declared insane.

In order to add a mite to the history of the affection, I propose to briefly narrate a case at present under my care, which differs from others on record, in that the patient is a woman, not at all educated, nor particularly intelligent.

Mrs. Y——, a farmer's wife, residing eight miles distant, first called on me nearly three years ago, complaining of a horror of being alone in the house, and of certain strange sensations occurring from one to many times daily, that she called "spells of being nervous." She stated that her health was excellent, and every bodily function in good working order. Looking on it as a case of hysteria, I treated her with various tonics—nervines—the bromides, etc., for several months without benefit, till at last disgusted at my want of success, she ceased her visits. This spring she returned and said that for two years she had been treated almost continuously by different physicians, without benefit, and desired me to make another effort for her relief. I instituted a thorough examination, of which the following is a brief report.

Mrs. Y—— is 34 years old, mother of three children, and a good type of the well-to-do class of farmers' wives. One, at least, of her parents, and all her brothers and sisters have died of consumption; but she presents no indications of the disease. Is of large robust frame, weight at age of 18, 200 lbs.; weight at present, 165 lbs. Dark hair and skin, muscles firm, pulse 80, respiration 20, temperature $98\frac{3}{4}^{\circ}$. Bowels

very slightly constipated, urine natural, menses regular, no vaginal discharge, sleeps well, tongue slightly coated—says her mouth is foul on waking. Had a severe attack of Roseola early in the spring, which left behind a chronic irritation of throat, and a catarrhal condition of stomach. Aside from this, every bodily function seemed in perfect order, and she chiefly complained of abnormal mental sensations—the unutterable terror of being alone—an inexplicable horror of something awful about to happen. So acute is this mental distress that she has more than once assured me she would rush through a lake of fire or plunge into the wildest torrent to escape the torturing fear. When in her husband's presence, or with congenial companions she is measurably at ease; but the mere presence of company is not sufficient, the person must be to her liking. She also complains of "nervous spells," which occur from once to many times daily and lasting from a few minutes to half an hour. These come on irrespective of who may be present, though less frequent in her happier moods. During these attacks strange wave-like sensations flow up the back of the neck, her head seems to jerk, and a trembling extends to the hands and feet. At first there is a sense of chilliness soon followed by a clammy sweat. Palpitation sometimes occurs and there is always a feeling of prostration and impending death.

Her husband informs me that he has been compelled to spend the past three years almost continuously in her presence. That if he leaves the house, even momentarily, for any purpose, she instantly drops whatever she may be engaged in and frantically seeks his presence, and that in all his farm labor

she either accompanies him or a woman to her liking must be hired to remain with her. To add to his discomfort marked suicidal impulses occasionally appear in his wife, as they have in others afflicted with the disease. She is not what is termed a *nervous* woman, and has no dread of uncommon natural occurrences, as wind storms, or heavy thunder, nor has she a childish fear of night and darkness. Her mental symptoms are all summed up and condensed into a frantic, undefined horror of some unknown, awful catastrophe happening to her if left alone, and she meditates suicide only that it seems to offer a door of escape from a mental agony that language fails to picture.

After a careful investigation of her case, I am inclined to the opinion that the disease was brought on by excessive labor in the hayfield during an intensely heated term three years ago. The malady began to manifest itself soon after, and it is certain that nothing of the kind had existed before.

On learning that she had been treated almost continuously for three years, and much of the time by physicians of reputation, I confess I saw but little hope of benefiting her.

I said, however, that I would first attempt to relieve her stomach and throat, and if successful would then try to improve her mental condition. In the course of six weeks she was perfectly restored to health; but there was no improvement in her mental state. As I had previously ran over the entire list of tonics—quinine, strychnine, acid phosphate, arsenic, *et hoc genus omne* in her case, I felt it useless to recur to them again. I ordered her to take effervescing bromo-cafein, a dessertspoonful four times daily. Reported one week later, no better.

I then prescribed celerina, from one to two teaspoonfuls

four times daily. Improvement rapidly commenced, and still continues. After using it only one week her husband found that he could leave the house without her instantly following his footprints. She has so far used less than one pint of celerina, and is better than she has been for three years. Of course it is too soon to predict a successful result; but the case is reported more on account of its rarity and peculiar features than from any desire to praise a particular remedy.

EDITORIAL.

ACTINOMYCOSIS IN MAN.

An editorial in the *New York Medical Record*, of March 20th, 1886, on "A New Form of Lung Disease," states that almost all cases of actinomycotic phthisis so far observed, have been found in Germany, yet it is not improbable that the disease occurs in this country, since the researches of Dr. W. T. Belfield have shown the prevalence of the actinomyces in American cattle. "It is to be hoped that American physicians living in the West, where opportunities for observing this disease occur, will report any cases that come under their observation."

The editor of the *Record* has probably not seen a report of two cases of human actinomycosis, read at a meeting of the Chicago Medical Society, on December 15th, 1884. An account of the proceedings of that meeting is published in the March, 1885, issue of the CHICAGO MEDICAL JOURNAL AND EXAMINER, page 259.

The reporter, Dr. J. B. Murphy, of this city, seems to have been the first to demonstrate the presence of the actinomyces in the human subject, in this country, and nearly two years in advance of the suggestion made in the *Record*.

THE DAILY PRESS AND MEDICAL SOCIETIES.

At a recent meeting of the Chicago Medical Society, a motion was made to rescind the standing resolution, under which reporters for the daily papers are excluded. The motion was rejected for substantially the same reasons that led the Society to pass the original resolution. It was then claimed that reporters sought chiefly sensational matters, and that subjects of scientific interest were ignored, and the Society and its proceedings were placed in an unfavorable light before the public.

The resolution has proved inoperative, for in many instances, when anything sensational has occurred, the gist of the matter has appeared in the morning papers in a more or less garbled and unsatisfactory manner. The reporters gather their information about these matters as best they can, either from interviews with members of the Society or otherwise.

Since much of the proceedings of the Society is of interest to the public, as well as to the medical profession, if properly reported, it would seem to be well to admit reliable reporters to the meetings of the Society, and it would seem to be practicable to have such persons detailed for that duty.

PROFESSOR V. GUDDEN.

News has been received of the tragic death of Professor v. Gudden, in connection with the mysterious suicide of the late King Ludwig of Bavaria.

Professor Gudden was for many years director of the large insane asylum in Munich, and professor of psychiatriy in the University. For a long time he has had in preparation a work on the anatomy of the nervous system. His views on the functions of the brain were widely known and quoted, though he had written but little. A fine laboratory in connection with the asylum contains thousands of microscopic slides and many hundreds of original drawings. The death of Professor Gudden is a loss to the medical profession, and occurring just as he was about to present some of the results of his patient and laborious work, may deprive the science of neurology of valuable contributions.

SOCIETY REPORTS.

CHICAGO MEDICAL SOCIETY.

Stated Meeting, May 3, 1886.—THE PRESIDENT, E. J. DOERING, M. D., in the chair.

DR. M. P. KOSSAKOWSKI exhibited a case of

DOUBLE HARE-LIP AND CLEFT PALATE IN AN INFANT.

He promised a subsequent report of the case.

DR. H. GRADLE read a paper on

PURE DRINKING WATER.

He said the only way of deciding the question whether the Chicago drinking water is ever deleterious to health is

to search for the number and kinds of micro-organisms it contains. The sewage is poured into Lake Michigan, the source of water supply, whenever the current in the river drifts toward the lake. It is well known that the discharges of typhoid fever—of which there are over 5,000 cases annually in the city—contain the typhoid bacilli. Any spores existing in them, and thus carried into the lake, are likely to remain alive in the water long enough for some few of them to enter the water mains. A similar danger is not unlikely in the case of other intestinal diseases, although the parasites causing them have not yet been identified. Such considerations lead one to suspect the water as the possible cause of infection, however rare.

The speaker has made some culture analyses according to the methods of Koch, and found from 1,000 to 1,500 living germs per cubic centimeter of water. Four to six varieties of bacilli are commonly met with in the water, mostly in the form of spores.

For purification the speaker recommended twenty minutes' boiling, or thorough filtration. Most filters in the market are inefficient. The Mallie aerifilter, however, was found to be practically bacteria-tight, when recently cleansed, though on continued use a few germs passed through it. It consists of a cylinder of porous clay screwed to the faucet, and surrounded by a glass cup, through which the water passes.

PROFESSOR LONG asked if it is demonstrated whether the bacteria in our drinking water comes from the sewerage or from the air.

DR. L. CURTIS said there is no doubt that water absorbs

a great number of bacteria from the air, and that these may gain entrance into the circulation through the digestive tract as well as through the respiratory tract. He said there is no doubt of the possibility of malarial germs being introduced into the system by means of drinking water.

DR. R. TILLEY wished to know if it has been actually demonstrated that the bacillus tuberculosis finds its way through our sewers into the lake and drinking water. We are not justified in saying that our water contains this element of danger until it has been demonstrated.

DR. J. ZEISLER asked if Dr. Gradle had examined the Waukesha waters and found bacteria in them.

DR. GRADLE closed the discussion by saying he took pains not to state in his paper whether he thought the disease germs found in the water were introduced by means of the sewerage or air. It is not a vital point so far as the use of the water is concerned, although if it is decided that these bacteria are introduced by means of the sewerage and not the atmosphere, it would have a bearing on the question of where to dispose of our sewerage. However, there is no doubt but bacteria are introduced into large bodies of water by means of dust, vegetation, and decayed leaves, and there is no reason to believe that the bacteria found in our water are derived from the sewerage alone. A Russian chemist had examined the water found at St. Petersburg, and found that at a distance from the city the number of bacteria per cubic centimetre was considerably less than near the city. Dr. Gradle had examined water obtained from Lake Michigan about thirty-five miles from Chicago and had found about the same number of bacteria per cubic centimetre, but a less

number of varieties than in city water. He believed the spores of typhoid fever and tuberculosis may find entrance into our lake water and become causes of disease in individuals who are not prepared to resist their attack. Dr. Gradle had never examined the Waukesha waters, but he had examined water from a spring on his own farm, which he believed to be as pure as Waukesha water, and had found only fifteen to twenty bacteria per drop, and only three varieties. He believed that spring waters are the purest, as the bacteria they contain cannot be due to sewage.

DR. W. H. LYFORD read a report of a case of

SCLERODERMA.

A girl, æt. 10 years, apparently healthy and of good family history. Five years ago she received a shock from a lightning stroke. Shortly afterward her parents noticed, under the surface of the skin over the outer region of the left forearm, a delicately traced symmetrical figure, branching and ramifying in purplish colored lines with singular regularity. Dr. Lyford believed the lightning had paralyzed the cutaneous branches of the musculo-spiral nerve, and caused congestion of these filaments, with the marking as a result. In due course of time the skin has undergone the changes that take place in scleroderma. There is hyperæsthesia accompanied by pain, especially at night. The patch is also now slightly elevated above the surrounding healthy integument, and is only slightly movable, while at the elbow it is attached to the fascia and sheaths on the tendons, thus interfering somewhat with the movements of the forearm.

DR. J. ZEISLER said he had seen four cases of scleroderma, two of general scleroderma and two of partial scleroderma.

The first two cases he saw in one of Kaposi's clinics. Their appearance was striking. In scleroderma the features of the face are immobile, and therefore the patient cannot express the emotions. The skin and underlying tissues seem to grow together. The cases of partial scleroderma he had seen in this city. In one patient the patch of scleroderma was a ribbon-like band behind one ear, pinkish in color, immovable upon the underlying tissues. The other case was a lady æt. 50 years, who noticed her right mammary gland was becoming hard, large, and the nipple contracted. There was no pain in the breast nor were the axillary glands involved. The skin was hard and adherent to underlying tissue. A similar condition was observed in a patch of skin on the right arm. Kaposi states the majority of cases of scleroderma occur in females. The best treatment for scleroderma is massage and galvanic electricity.

DR. H. GRADLE presented some stereoscopic views of sections of hypertrophied tonsils taken from Troutman's book on "Hypertrophied Tonsils," after which the Society adjourned.

CHICAGO MEDICAL SOCIETY.

Stated Meeting, May 17th, 1886.—THE PRESIDENT, E. J. DOERING, M. D., IN THE CHAIR.

PROFESSOR EDMUND ANDREWS exhibited a

NEW EVACUATOR FOR LITHOLOPAXY,

and said that one serious defect of Bigelow's and Thompson's evacuators is that the rubber bulb makes suction only for an instant instead of continuously, thus allowing fragments of stone which lie along the tube to be thrown back into the bladder when the bulb is compressed, thus irritating the bladder as

well as causing it to be repeatedly expanded. To obviate these difficulties Professor Andrews has had constructed an evacuator in which the essential features consist in a double-chamber evacuating tube, straight or curved, the upper chamber being composed of thin metal $8\frac{1}{2}$ millimetres in diameter, terminating in a round tip with fenestrum for evacuating, the under chamber being semi-cylindrical, fitting under the upper chamber so as to make the whole tube oval-shaped, with a diameter of $31\frac{1}{2}$ millimetres. To the under or inflow tube is attached a rubber tube three yards in length, with an inside diameter of one centimetre, to the outer end of which is fitted a metallic strainer large enough to admit without resistance all the water which will flow through the tube. A bucketful of warm carbolized water, $1\frac{1}{2}$ per cent, is hung over the operating table high enough for the surface of the water to be forty-two inches above the pubis of the patient. When it is desired to wash out the bladder the evacuating tube is introduced with the fenestrum towards the patient's head and the tip of the tube pressing towards the rectum, thus making a hollow in the bladder into which the fragments of stone fall. The strainer having previously been introduced into the warm carbolized solution and the rubber tube filled, this tube is attached to the inflow tube and the stopcock turned. The water now enters the inflow tube and passes into the bladder through the small perforations with sufficient force to rapidly drive the fragments of stone through the fenestrum and out of the evacuator. The current is continuous and rapid; in a recent case of litholopaxy where the calculus was hard oxalate of lime an inch in diameter the fragments were washed out in ten seconds. When the inflow tube is closed by a fragment of stone in the fenestrum the operator simply presses on the

last four inches of this tube, which is of rubber, and this dislodges the fragment.

Professor Andrews also called attention to a device for securing to any instrument filiform bougies by means of a split screw passing over the bougie secured by a nut, both fitting into the outer end of the catheter.

DR. W. T. BELFIELD opened the discussion by saying that the disadvantages of the ordinary evacuating apparatus mentioned by Dr. Andrews were well recognized, and that the apparatus exhibited seemed adapted to remove them. It possessed, however, one element of danger, namely, the possibility of undue distension of the bladder through sudden clogging of the exit tube. In cases of concentric hypertrophy, where the bladder can contain only three or four ounces, the continuation of the powerful inflow might, if the exit were obstructed, cause serious damage. Of course if the clogging is immediately discovered, a prompt use of the stopcock would prevent injury.

As to the urethral instrument, he would wish to be sure that the filiform bougie could not be detached beyond the stricture. This danger attaches, of course, to all methods of securing the filiform, but would seem to be especially great in the arrangement exhibited. The loss of a filiform in a tight stricture is an extremely uncomfortable accident; in several cases surgeons have even made external urethrotomy to recover it.

To Professor Andrews's remark that in case of such an accident urethrotomy is readily avoided by inserting a small lithotrite into the bladder and seizing the filiform, Dr. Belfield replied that when there is present a stricture so tight as to require patient work to get a filiform to pass, a small lithotrite

could hardly enter the bladder unless reinforced by a sledge-hammer. If the urethra is everywhere large enough to admit a small lithotrite, there could be no danger of losing a filiform because there would be no occasion to use one.

DR. FENN wished to know, if the momentum could be increased by increasing the specific gravity of the fluid, what would be the effect of a greater elevation of the reservoir?

Professor Andrews said that the attachment of a flexible guide to the urethrotome is always a source of care lest it become detached. This was less liable to occur with his instrument than in the old way. In case it should happen the lost guide could be seized and drawn out with a lithotrite.

The question of the pressure of the fluids and the strength of the bladder is one of great interest. But little is known about it. No more force should be used on a distended bladder, certainly, than a normal one could readily endure. We get the measure of this to some extent in the pressure of the expulsive power of the organ, which is a safe limit to keep inside of in the absence of other data. The pressure which Bigelow's evacuator ordinarily gives may form another guide, as this is known to be harmless. The reservoir must not be placed so high as to cause dangerous distension, should the outflow tube become obstructed. In practice forty inches had given all the current needed, and this was doubtless a safe pressure to use in any and all cases.

DR. JAMES I. TUCKER read a paper on

UNDIAGNOSABLE MALADIES.

These cases generally are not recorded because there is so little about them that is tangible. They are perhaps functional

derangements simulating organic diseases. Sometimes these cases yield readily to simple remedies, but are puzzling because so evanescent. At other times they are graver, often ending fatally and yielding no facts upon post-mortem examination which will aid in a correct diagnosis. But the list of undiagnosable ailments is rapidly decreasing ; for example, Richard Bright in 1827 explained that dropsical effusions are frequently due to diseases of the kidneys. Thomas Addison in 1855 ascribed to disease of the suprarenal capsule the cause of a form of anæmia accompanied by a dingy discoloration of the skin. Until recently herpes zoster frontalis was classified among skin diseases, but now with much accuracy it is traceable to disease of Gasser's ganglion. Dr. Tucker related a case in which a lady had been twice badly frightened and her nervous system had been severely prostrated. At intervals she was attacked with an epileptiform seizure, transient paralysis of the entire left half of the body, constriction of the larynx, a state of trance, and finally a trance-like state in which she had died. This patient's mother, after a period of nervous disorder, had become a paraplegic, her father was temporarily insane, the eldest brother has an undefinable nervous disorder and a younger brother spasmodic asthma, while a sister has attacks of recurrent chorea major. In this peculiar group of nervous disorders what is the underlying cause? It is as yet unknown. This case illustrated the difficulty which hedges about the diagnosis of hundreds of cases of disease.

DR. PEARSON illustrated the difficulties physicians have to overcome in making a diagnosis by reason of the fact that they overlook some points in the history of a case, as in a case in which a patient had swallowed a piece of a metal spoon and it had lodged in the duodenum and blocked up the portal vein.

DR. W. T. BELFIELD presented specimens of

ANCHYLOSOTOMUM DUODENALE.

These had been referred to him for verification by Dr R. W. Gelbach, of Mendota, Ill., who had discovered them in the intestines of young cats that had died of anæmia. Dr. Belfield confirmed Dr. Gelbach's identification of the worms, but for further verification sent them to Professor Joseph Leidy, of Philadelphia, who replied he thought they were anchylostoma, although he had never seen authentic examples. Dr. Belfield said the anchylostoma are small nematode worms, about half an inch long, which inhabit the duodenum of men and cats, and probably of other animals. Discovered in 1838, their pathogenic significance was recognized by Griesinger in 1851, who found in them the cause of Egyptian chlorosis. They are veritable leeches which fasten themselves to the intestinal mucous membrane and suck the blood of their host. When present in large numbers they induce pernicious and fatal anæmia by exhausting the individual's blood. In tropical climates, particularly Egypt and Brazil, cases of pernicious anæmia or chlorosis produced by them are quite frequent; in Brazil such cases are quickly cured by administering the pulp of fresh figs, which destroys the worms. Quite recently anchylostoma have been searched for and found in patients dead of pernicious anæmia in Germany. So far as Dr. Belfield knew, Dr. Gelbach is the first to discover the worms in the northern States of the Union. Their presence in cats makes it probable that they infest human beings also in this latitude. The possibility of this cause of pernicious anæmia should therefore be

kept in mind, especially when other recognized causes—chronic nephritis, malaria, etc.—cannot be detected.

PROFESSOR E. ANDREWS asked if these worms were ever found in sufficient numbers to cause death, and he was answered affirmatively.

PROFESSOR W. W. JAGGARD exhibited the head of the *taenia mediocanellata* obtained in the practice of Dr. C. G. Smith. The following was the formula used:

R. Chloroformi	f ʒi.
Oleores. felicis maris.....	f ʒi.
Ol. tiglii.....	gt. i.
Aquæ camphoræ.....	f ʒii.
Gum. acaciae q. s. ft. emuls.	

MICHIGAN STATE MEDICAL SOCIETY.

The twenty-first annual meeting of the Michigan State Medical Society was held at Jackson, June 9th and 10th. There was quite a large attendance of representative medical men from all parts of the state. The meeting was called to order by the President, Dr. E. P. Christian, of Wyandotte. Professor Stark, of the Congregational Church, opened the session with prayer. The address of welcome was made by Mayor Bennett. Dr. Main presented the report of the Executive Committee and invited the members of the society to attend a reception to be held at Assembly Hall tomorrow evening. Professor Frothingham presented a report on Ophthalmology. A paper on Foreign Bodies in, and inferior to, the Eyeball, by Dr. Connor, of Detroit, was of much interest. "A proposed plan of Sanitation" was the subject

of a paper by Dr. Wight, of Detroit, and a select committee was appointed to present the subject to the next legislature. Professor Maclean gave some recent experiences in surgery, which were interesting and well received. The two first hours of the afternoon session were taken up with papers relating to diseases of females and discussions of the papers. The evening session opened at 8 o'clock. The President read his annual address. Dr. Brown, of Detroit, read a paper entitled "Irritation of the Alimentary Canal." The subject was quite freely discussed. Several motions relative to miscellaneous business were passed. Dr. Ward, of Langsburg, read a humorous poem entitled "Medical Milk." The charges which were brought against Dr. Kellogg, of Battle Creek, for unprofessional conduct and were not sustained by the County Medical Association, were brought before the State Society and were referred to the Judicial Committee. A paper entitled "Some Special Points for Operative Surgery," by Dr. De Camp, of Grand Rapids was well received. Dr. Sullivan, of Ann Arbor, presented a paper entitled "Observations on the Administration of Chloroform." Dr. Herdman, of Ann Arbor, read an interesting paper on "Convenient Manner of Handling Patients Afflicted with Spinal Disease." Dr. Clark presented a paper entitled "Disinfectants and Sanitation." Dr. Long, of the U. S. Army, read a paper on "Small-Pox Inspection Service." A large number of applications for membership were favorably acted on. On motion, five hundred dollars was voted to the International Medical Congress to be held at Washington next season. The next meeting of the society to be held at Lansing, and the time of meeting changed to

Thursday and Friday instead of Wednesday and Thursday, as heretofore. Dr. Ranney, the Secretary, read an interesting report of the society since its organization. The Doctor has been a most efficient secretary for twenty-one years, but owing to the fact that he would spend most of the coming year abroad, he would be compelled to decline a reelection. The Doctor was made an honorary member. The Nominating Committee reported as follows : *Vice-Presidents*, Dr. Walker, Dr. Hemingway, Dr. Stoddard, Dr. Newkirk ; *Secretary*, Dr. Duffield ; *Treasurer*, Dr. Hagadon ; *Judicial Committee*, Dr. Boise, Dr. Main, Dr. Christian.

TRANSACTIONS OF THE CHICAGO GYNÆCOLOGICAL SOCIETY.

LXVI Regular Meeting, April 23rd, 1886.

I.—CALDWELL. *Report of a Case of Hernia of the Umbilical Cord.*

II.—BARTLETT. I.—*A Case of Dermoid Cyst Complicating Labour.*

2.—*A Case of Placenta Prævia in which the Placenta was Expanded Over the Entire Ovum.*

The PRESIDENT, DANIEL T. NELSON, M. D., in the chair.

DR. CHARLES CALDWELL read a paper entitled,

REPORT OF A CASE OF HERNIA OF THE UMBILICAL CORD.

I was called August 10th, 1885, at 6 P. M., to attend Mrs. C., who was in labour with her ninth child. I made an examination and found a vertex presentation, first position ; os well dilated but no bag of waters had formed.

The first stage of labour was completed at 7 P. M., and the second an hour later. The child, a female, was quite large with very broad shoulders, which were difficult to deliver.

As soon as the child was expelled, I discovered she had a large umbilical hernia. I ligatured the cord and gave the child to the nurse, who removed it to another room, that the mother might not be alarmed at sight of the tumor.

The placenta was expelled by Credé's method and the uterus contracted firmly under pressure of the left hand.

After the binder was applied and the mother made comfortable, I examined the tumor more carefully. It was as large as a small orange and of similar shape. The circumference in the largest place,—the center,—was about ten inches. The diameter of the orifice or abdominal opening, two inches. The sac was translucent and the viscera,—intestines,—could be distinctly seen when the child cried and forced them out. The umbilical vessels were on the left side of the sac. The skin was projected from the abdomen on to the side of the sac at its base about half an inch.

Diagnosis.—Hernia of the umbilical cord.

Pathology.—Ectopia of some or all of the abdominal viscera at the point of insertion of the umbilical cord, is usually due to an arrest of development of the abdominal parietes, and failure of the intestines originally projecting into the vitelline duct to return into the abdominal cavity.

Simpson thinks it may sometimes be traced to peritonitis. Cleft abdominal walls, a similar arrest of development to that of cleft sternum, may exist in the muscular structure of the front of the abdomen, which may expose the whole contents of the abdomen, or the central line of the abdomen may be weak from deficiency of muscular structure.

If the orifice is very small, it can be treated successfully by a simple compress and adhesive straps. But if large, nothing except a plastic operation is indicated.

The coverings of the hernial sac are, from without inwards (a) amnion, (b) peritoneum.

Treatment.—After examining the sac thoroughly I was convinced that nothing but surgical interference could save the child's life.

I called our President and Dr. Jaggard by telephone, but both were too busy to assist me that night. They both recommended a cork compress held in position by adhesive strips, evidently thinking it an ordinary case of umbilical hernia.

I decided not to operate until the next day, and enveloped the sac with absorbent cotton, retaining it in place with a loose band.

The next afternoon, Drs. Dudley and Jaggard met me in consultation. After examining the little patient, they decided with me, that nothing but surgical interference would give her any chance of life, and kindly assisted me in the operation.

It was decided not to give an anæsthetic. Dr. Jaggard seizing the sac, gently forced its contents, the viscera, back into the abdominal cavity and I ligatured it as close to the abdomen as possible, but did not draw the ligature perfectly tight. At the suggestion of Dr. Dudley the sac was now opened, to be sure no portion or loop of the bowel was confined by the ligature.

The peritoneum being opened, the index finger was passed into the abdominal cavity to hold back the bowel and protect it from the points of the hare-lip pins, which were passed at right angles to each other through the narrow piece of skin at the base of the sac. Two more ligatures, carbolized silk, were applied beneath the pins and were drawn tight enough to close the opening. The outer layer of the sac was trimmed off

leaving a stump one and a half inches long. Dr. Dudley passed a gathering suture round the stump sealing it more tightly. This completed the operation; after which the stump was dressed with iodoform,—a narrow strip of carbolized gauze passed beneath the pins,—several layers of absorbent cotton and a roller bandage. The child was restless that night, crying several times, but slept well the next day. I dressed the stump every day, reapplying a similar dressing. The bowels moved naturally until the 16th, when I discovered some fæcal matter on the dressing as I removed it.

On the 17th, all the fæces passed through the fistulous opening. The members of the family were very much alarmed and wished me to close the opening at once. I assured them that nature would close it without any further surgical interference.

I called on Dr. C. T. Parkes for his advice. After hearing the history of the case he said it would undoubtedly close by granulation in a few days.

For four days all the fæces passed by the fistulous opening, but on the fifth there was a little stain on the diaper. On the sixth more and on the seventh all the fæces passed *per rectum*.

The family were happy once more, for the fistula had closed. There were no symptoms of peritonitis at any time. Neither vomiting, tympanites nor pain. The patient did not cry more than babies generally do, but nursed and slept nicely, requiring no unusual care.

The bowel, at point of perforation, was held firmly bound to the abdominal walls by lymph, which was thrown out.

From this time the wound healed very rapidly. The end of the stump sloughed, leaving it quite short. The small

intestine was probably the one perforated, for there was no odor to the discharges.

What caused the rupture of the bowel to take place I am unable to say. Probably, either a portion of the bowel was caught, and became strangulated by the ligature, or it was punctured by a pin, as that instrument was inserted.

Dr. Dudley says the surgical operation was certainly a laparotomy, for the abdominal cavity was opened and the index finger introduced.

DISCUSSION.

PROFESSOR DE LASKIE MILLER said he had seen numerous cases of hernia but thought this specimen was possibly more extreme than any he had seen.

THE PRESIDENT asked Professor Miller in how large a hernia he would deem operative procedure, of a plastic nature, necessary.

PROFESSOR MILLER did not think it possible to state, by actual measurement; so much depends upon the condition of the tissues surrounding the opening, that the absolute diameter of the opening would not be the governing principle. If the borders of the opening are of considerable thickness and the tissues well developed, it would be possible to reduce and probably cure a hernia independently of any cutting operation. He inferred that in the case described in the paper there was a deficiency of all the tissues except the peritoneum and the amnion, the skin projecting upon the sac one-half inch around the opening. He thought there was another explanation possible in this case, viz., that the duct leading from the umbilical vesicle remained or became patulous and the fecal matter passed out through that; for the duct can be seen in the cord, even at delivery, in some cases. He inquired as

to the cause of the arrest of development of the abdominal parietes in such a case.

DR. EDWARD WARREN SAWYER thought it not a very unusual thing to find a prolongation of the intestine into the cord. He once came very near tying the cord including a loop of intestine, so near that he had since observed the rule to always satisfy himself, by careful manipulation of the cord, that it contained no loop of intestine, and this routine practice had revealed the fact that very often a suspicious enlargement of the cord is found, sometimes extending three-fourths of an inch above the level of the abdominal wall and the intestine, or portion of the omentum, is not infrequently projected into this *cul de sac*. He thought in the majority of cases nature would take care of the condition without any attention from the attendant. He had never seen so large a hernia as that described by Dr. Caldwell, and did not understand why it should have assumed a spherical shape; he could understand how it might be pyriform or sausage-shaped, and extend an inch or two into the cord, but how the cord could suddenly dilate and form a large globe, and this globe be followed with the contents of the abdomen, it was difficult to comprehend.

DR. SAWYER inquired what there was about this case that enabled the physicians to decide so quickly that an operation must be resorted to in order to save the child's life. To him an operation would have been a second consideration. Dr. Jaggard evidently reduced the hernia without difficulty, and having reduced it, it seemed to Dr. Sawyer that a well applied bandage would have secured it. The operation was brilliant and creditable, but he thought an operation should have been considered, after the attendants had failed utterly to secure the hernia within the cavity by a well applied bandage.

It was stated in reply to questions that the child presented no symptoms; the hernia was reduced by Professor Jaggard; the tumor about the size and shape of an orange; the operation was performed the day after birth; there was no evidence of strangulation of the gut.

DR. SAWYER said that Dr. Caldwell had assured him that he was certain that in passing the hair-lip pins no part of the intestine was included, and the finger was introduced to push everything beyond the reach of the pin. Dr. Sawyer thought, however, that the centrifugal pressure must have been considerable, and the contact quite severe. He thought it strange that none of the fæcal matter escaped into the peritoneal cavity, although there were adhesions between the intestine and abdominal parietes.

THE PRESIDENT: Of course every case must be decided on its merits, but might we not hope for the closure of the opening of an inch and a half in diameter, provided the tissues are well developed around it, without a cutting operation? It would seem possible to close as large an opening as in the case under discussion by simple adhesive strips. He had seen one case that reminded him of this: the opening was not nearly as large, it did not exceed three-fourths of an inch in diameter, and the length of the sac was much longer than the opening. Into this sac there was projected a solid body. As the child afterwards died, he found it was the *lobus Spigelii* of the liver. It was so conical, or heart-shaped, that the anatomy could not be made out until after death. The instruction to him in that case was the importance of not including any of the abdominal tissues by the ligature that might be passed around. He was careful to pass the ligature around the umbilical cord so as not to

include the sac, but it might readily have been passed close to the abdomen and made to include the solid tissue, which, as he afterwards found, was a portion of the liver. The child died, not from the hernia, but from some want of development which he was unable to find out, no careful *post mortem* examination being allowed, but he believed there was lack of foetal development necessary to life. The child was fairly well developed and seemed as if it should have lived, so far as this slight defect was concerned.

The PRESIDENT asked if any one could suggest the reason for the faecal fistula. It seemed to him that in this case it was the result of inflammation caused either by pressure against the pins or the ligature; if the intestinal wall had been punctured by the pins, the physician would have seen evidences of it earlier.

PROFESSOR J. H. ETHERIDGE inquired whether this was not the youngest laparotomy on record. He wished to know if it would not be possible to crowd back the viscera and then hold them in place with adhesive strips.

PROFESSOR T. D. FITCH said that he had not had experience with congenital hernia at birth, but had seen it occur within twenty-four hours afterward, and had successfully closed an opening an inch or an inch and a quarter in diameter by the ordinary method, viz., compress and bandage.

Professor Fitch had had very peculiar success in the treatment of infantile umbilical hernia, by the ordinary means, and he should hesitate very long about an operation until he had tried all the ordinary means. His method of treatment differed somewhat from the ordinary treatment, however, in the adoption of an elastic web bandage instead of the ordi-

nary bandage or adhesive plaster, and he thought it far superior to an inelastic bandage, as it gave the child room for an accumulation of intestinal gases, which very often become painful when a fixed bandage is placed around the abdomen. He first applied a hard compress, like a button-mole—(plano-convex)—to cover the opening. This should be large enough to extend three-eighths of an inch beyond the margin of the opening, and should be covered with one or two thicknesses of fine soft muslin. After returning the protruded substance *perfectly*, the compress should be fixed in position by short adhesive strips, then apply the elastic webbing around the body of the child tolerably tight and let each turn of the bandage lap the previous one half its width, making a sufficient number of turns to cover six or eight inches of the abdominal surface vertically. He would leave this on, undisturbed, unless the child became restless, or exhibited some indication of injury—for a month or longer before removing it. He had never found that the skin suffered from the confinement of the perspiration.

Another advantage was that the elastic webbing being rough and the laps of the bandage holding each other, it always stayed in place, and held the button firmly and so secured the opening against any possibility of protrusion. He had used this method successfully for about thirty years. He had a case at Waukegan which occurred twenty-four hours after birth; did not attend the mother at the birth, but was called to treat the hernia which was reducible, and would gurgle in and out at almost every respiration, bulging out as large as an English walnut.

He visited the child only once and told the parents to remove the bandage at the end of four weeks, when the opening was found entirely closed. The child is now nine or ten years old, perfectly healthy and always has been.

DR. CHARLES CALDWELL: The Fellows of the Society have evidently misunderstood the nature of the case described in the paper. I am sorry that such obscure and confused conceptions have been conveyed. The case was one of hernia of the umbilical cord, consisting in "the escape from the abdomen, at the point of insertion of the cord," of some of the foetal abdominal viscera, and was due either "to arrested embryonic development, preventing the complete closure of the abdominal cavity, or failure of the foetal intestines, originally situated outside the abdomen to enter the same" (Lusk). The remarks of most of the Fellows are accordingly irrelevant.

As no one who witnessed the operation was present at the discussion of my paper, several questions were unanswered.

DR. SAWYER wished to know why we decided so quickly that surgical interference was necessary to save the child's life?

The consultation was held about twenty hours after the birth of the child, and at that time the outer layer of the sac, the amnion, was dark and gangrenous in several spots. Its nutrition was cut off when the cord with its umbilical vessels was ligated, and it would have sloughed off in a few days leaving the viscera covered by the peritoneum only. We were of the opinion that such a condition as then existed would be followed by general peritonitis and death without some surgical operation.

DR. BYFORD wished to know the literature of the subject. I have been able to find but one case similar to mine.

Thomas Bryant, in the last edition of his "Surgery," mentions the only case he ever saw and his treatment. In June, 1876, a child, one day old, was brought to him with hernia of the cord. The sac was translucent, the size of a small egg, and contained the cæcum and vermiform appendix. He pressed back the bowel with the thumb and forefinger, stitched up the cord at the umbilical orifice with deep sutures and ligatured the cord itself at the apex of the congenital hernial sac.

Recovery was complete without a single bad symptom. He recommends his operation in all similar cases, evidently considering it the only treatment indicated. So we were supported by the best of authority, in operating instead of trying to apply a compress. Should I ever meet with a similar case, I would perform an operation different from either Bryant's or mine.

I would first remove the amniotic layer of the sac, if it could be separated from the peritoneum, excising or amputating it at its junction with the skin, return the viscera and peritoneal sac to the abdominal cavity and close the abdominal opening as in a case of exploratory incision, or simple laparotomy. Either incising the peritoneal sac to better protect the bowels from needle points, or stitch to the bottom of the wound by deep sutures, and support the sutures by adhesive straps around the abdomen.

I would recommend this operation after observing how quickly the amnion sloughed away. It might just as well be removed at once if it can be easily separated from the peritoneum.

DR. JOHN BARTLETT made remarks upon, (with the exhibition of specimens of)

(1)—A CASE OF DERMOID CYST COMPLICATING LABOR.

(2)—A CASE OF PLACENTA PRÆVIA IN WHICH THE PLACENTA WAS EXPANDED OVER THE ENTIRE OVUM.

Dr. Bartlett said, "I have recently seen two interesting cases of labor, and I wish to present a specimen obtained at each of these, to the SOCIETY.

The first was a case in which I was called to assist Dr. John S. Clark. The patient, a primipara, about thirty years old, had been in labor under the care of a midwife about twenty-four hours. The head was making no progress, and exhaustion was approaching; about one ounce of fluid extract of ergot had been given. Dr. Clark found the head lying with the antero-posterior diameter corresponding with the conjugate, the parietal eminences had passed the brim. He applied an old style, high curve, Bedford's forceps, but found his efforts unavailing in causing the head to advance. Dr. Bartlett then attached his direct traction handle, and descent of the head was effected. After delivery of the head there was difficulty in delivering the shoulders. When an effort at extrusion was made, there appeared in the perineal region, between the vulva and tuberosity of the ischium, a jutting outward of the tissues in the form of a tumor. It seemed as if an obstructing body was wedged in front of the shoulders. Counter pressure was made upon the protrusion, and the delivery was completed. Following the child, came a tumor of the shape and size of a large pear, presenting at the small extremity a pedicle. It was a thin dermoid cyst containing a mass of fatty substance, embedding numberless long intertwining hairs. The tumor could not be felt during labor, and a careful inspection showed that it had not been attached to the child. It was probably attached to

the uterine surface, resting between the head and the shoulders. Possibly it was the cause of the dystocia in diverting the head from an oblique diameter of the brim. Depression of the vital powers with high fever set in soon after delivery, resulting in death within four days. Dr. Clark's examinations *post partum*, detected no injuries beyond laceration of the perineum. The child was still-born.

The second case was one of *placenta prævia*.

Mrs. N. had had several children, and within eighteen months past, two miscarriages. In January last, when she was nearly four months advanced in pregnancy, I was called because of serious hæmorrhage. The uterus presented to the touch nothing peculiar, there was none of that extra development of the lower segment of the organ which is supposed by some to indicate *placenta prævia*. The tampon was applied, opiates given, rest enjoined, and the bleeding ceased. At four and one-half months the hæmorrhage recurred. Under treatment, the bleeding was in some measure controlled. For the two following months it was continuous, generally moderate, occasionally quite severe, at all times, as she declared, four-fold greater than the flow of menstruation. I then deemed it best at six and one-half months to induce labor, but Dr. John S. Clark, in consideration of the probable non-viability of the child, advised further delay. The flow, however, was so great that the tampon was applied, and in forty-eight hours thereafter labour began.

Upon removing the plug, the os was found thin, softened, and three-quarters of an inch in diameter. At about the fourth hour of labour, the os rather suddenly enlarged to a

diameter of one and a half inches, and the hæmorrhage became profuse. The half hand was introduced into the vagina, and the placenta stripped off over an area, the radius of which was three-fourths the length of the middle finger. With the bullet forceps, used by me with advantage in such cases, the membranes were torn, and the opening so made was freely enlarged by the finger. Hæmorrhage immediately ceased, and labor became more active, so that in the course of an hour the child was delivered, breech first. Several inspirations were made by the foetus, a fact of interest in view of the peculiarities of the placenta, which I here present. In order to display the specimen to better advantage I have filled the cavity of the membranes with horse hair and sewed up the aperture. It will be observed that the main body of the placenta, the normal placental mass, is not *præ-via*, but attached near the fundus, and that the rare anomaly is here presented of a continuous placental tissue spreading over the entire ovum. Observe that the extra, adventitious portion, continuous with the normal placental edges, and everywhere enveloping the membranes, is comparatively thin; in the present state not thicker than one-eighth or three-sixteenths of an inch.

PROFESSOR W. H. BYFORD spoke of a specimen he exhibited some time ago at the Chicago Medical Society—a dermoid cyst which was expelled from the vagina. It was sent to him by Dr. White, of Bloomington, who said the tumor was situated in the anterior wall of the vagina, and as the child was delivered the pressure of its head pushed the tumor out before it. He thought that in the case under discussion the tumor may have been developed in the vaginal walls. The localities

of these growths are not uniform and we find dermoid cysts situated in the vaginal walls. Dr. Bartlett said in answer to a question from Professor Byford that the existence of the cyst was not discovered before but during labour; that it was beyond the head and may have been an ovarian tumor; it was not outside the vagina, but between the head and shoulders. He thought it almost certainly a dermoid tumor of the vagina.

PROFESSOR W. H. BYFORD thought that these cases are almost always found in old or multiparous patients.

With reference to Dr. Bartlett's second case, he asked if the hæmorrhage ceased before rupturing the membranes, or if the whole operation was done at once. Barnes claims that if the membranes are separated over the cervical zone the hæmorrhage will stop; that there will be sufficient retraction of the cervical zone to close up the mouths of the vessels. He thought it a point of interest to know whether or not that would have stopped the hæmorrhage, and whether it would not have been sufficient. He thought in that case one is not called upon to leave the membranes intact.

PROFESSOR DELASKIE MILLER said that the effect of endometritis is usually to increase the area of the development of the placenta, and he had not infrequently seen cases of placenta of the usual size, on which projections appeared in different parts in the interior of the uterus, partially connected or entirely disconnected. He asked whether a case of endometritis might not allow the villi of the chorion to form these *placentæ succenturiatæ*. He was inclined to think that condition would encourage it. Another fact in the history of the case that would perhaps justify this theory was the several miscarriages the patient had experienced before this pregnancy.

PROFESSOR T. D. FITCH said that in thirty-five years of

practice, in which he had probably attended more than a thousand cases, he had seen but one case in which he suspected *placenta prævia*. He was sometimes ashamed to make the statement for fear his experience had been from lack of close observation, or inability to recognize a case, but he had seen only one, and did not know that that was really a case of *placenta prævia*. He did not detect it by manual examination; the symptoms were altogether subjective. It was a seven months' labour and the child lived. There was a good deal of hæmorrhage. He had no difficulty with the labour, except from the hæmorrhage, and that did not prove serious.

THE PRESIDENT asked if any one could suggest the origin of the tumor? Was it a twin or a dermoid thrown off from the fœtus, or was it from the mother. He asked Dr. Bartlett if it was a part of the child, and was answered that after careful examination no place was found where it might have been attached. It was perfectly loose in the vagina; probably the pedicle had been ruptured.

DR. EDWARD WARREN SAWYER thought (with reference to the second case) the case had several very interesting features, and the subject itself is full of interest. He referred to a conversation earlier in the evening in which Professor Byford had said that he had been in practice many years before seeing a case of *placenta prævia*, and the first case he ever saw was the first of three in one night. It had happened to Dr. Sawyer to see a number of cases of *placenta prævia*. He had had two fatal cases and had learned something of early diagnosis, which had been profitable to him since, and he thought of it in the obscurity

of the diagnosis in Dr. Bartlett's case. He said that in one of his cases, after reading of the ease with which one could auscultate the lower segment of the uterus under these circumstances, he prolonged his stethoscope with a long flexible tube, put a cup on the end of it and had no trouble in introducing it into the woman's vagina. He had repeatedly detected portions of the cervical attachment of the placenta by this mode of auscultation. The remark made by Professor Byford had received some confirmation in his experience, viz., that many cases of *placenta prævia* aborted early and that he believed this to be a frequent cause of early abortion. Spiegelberg says that *placenta prævia* is of very frequent occurrence. An interesting fact in connection with Dr. Bartlett's case was the alarming amount of hæmorrhage which took place from the placenta and placental attachment away from the main part of the placenta, or in other words, there were sinuses in the cervical zone of this uterus which were covered only by the velamentous portion of the placenta, sinuses large enough to bleed, and exsanguinate the woman. Dr. Sawyer spoke of a case to which a former pupil of his was called. A midwife summoned him at midnight to see a woman who was bleeding to death. As he entered the room she handed the doctor a cord (the child was delivered), and the placental end of the cord was a disk about as large as a butter dish. That fleshy mass had been pulled directly from the placenta and the woman was actually bleeding to death. This little mass was very thin and he was at a loss to understand to what part of the placenta it could have been attached. He delivered the woman completely and she was saved. He found a

hole through the placenta corresponding to the disc which had been pulled out, it was in the thin portion of the placenta, and the bleeding was somewhat alarming. Referring to the question that Professor W. H. Byford asked concerning the mode of treatment advocated by Barnes, Dr. Sawyer said he was full of the idea, and the feasibility of it was accepted by him in his first reading of Barnes' work, and he tried to adopt it in practice, but he hoped no one would ever get himself into such a dilemma, as he was sure he lost his patient by that course. Theoretically you may detach enough of the placenta to save the woman from hæmorrhage. The so-called cervical zone is not to be measured by the finger, he did not think it had any definite boundaries; it might sometimes extend half way to the fundus on one side of the uterus and he thought the more we detach the more dangerous it may become. He felt quite confident that the poor woman who was the victim of the theory of Barnes would not be dead to-day if he had adopted a more rational treatment.

There was one point in connection with the causation of *placenta prævia* that excited a great deal of interest in his mind. He had seen two cases strangely confirmatory of the movement of the ovum in the early days of its sojourn in the uterus. One case was also seen by the PRESIDENT, but he had never spoken to him of the theory which the examination of the placenta had been the origin of. Dr. Sawyer had written to several prominent obstetricians of this country, asking if they knew anything in the literature which would answer the question: Can the ovum once attached to the decidua of the uterus become detached and again attach itself to the lower

part of the uterus and go on through pregnancy? In other words, can the ovum detach itself, drop from the top of the uterus to the bottom, re-attach itself in the cervical region. Many learned men replied that they had never heard of such a possibility. But Dr. Harris, of Philadelphia, hit upon this happy expression: "Rotation of the ovum." He had seen two cases in which he thought the ovum rotated in the earliest days of pregnancy; not a complete rotation, but an almost complete detachment and rolling, or rotating, downward and there attaching itself. The second case was in the practice of Dr. Doering. The subsequent examination of the placenta showed a case of partial *placenta prævia*. The umbilical cord springs from the margin of the placenta in both instances; and his theory was that in the first case, which was that of a young primipara, the placenta was fixed normally at the fundus and the cord sprang from the middle; there was a history of a sudden jar of the body when she was about three weeks pregnant; she jumped from a high wagon and immediately flowed a little, and when she came to be delivered she had a complete *placenta prævia*. The examination of the placenta showed that the cord was attached to one margin, showing that it had rolled down and formed a new attachment for the umbilical cord. When the placenta was at the fundus and the cord at the middle, by its rolling downward it placed the cord at the margin. He thought one of the most important causes of *placenta prævia* is this rotation of the ovum very early in pregnancy; a rotation that may be caused by a sudden jar, and he thought the confirmation of it is in the unusual attachment of the cord.

PROFESSOR J. H. ETHERIDGE had seen one case of a woman with *placenta prævia* with twins. At about the fourth month the

woman fell and struck the lower part of the abdomen against the top of a wash tub, she had a little hæmorrhage, and from that time till term she was always tender at that spot. Free hæmorrhage took place and he was called to see her. The woman was delivered of a mature fœtus, and of a child that was evidently arrested in development about the fourth month. The theory formed was that there was a partial detachment of the second placenta, the other child went on and developed regularly. The mother died in a few hours after delivery.

THE PRESIDENT wished to say a word about the theory of causation advanced by the SECRETARY, the idea of displacement, or rotation of the ovum after implantation. It seemed to him that there was a more important cause, and in all the cases he had personally investigated, about four, there had apparently been good reason for the theory that disease of the uterine mucous membrane, inflammatory and with an unusual pathological amount of secretion over its surface, is the cause of the implantation at the cervix instead of at the normal place, in the vicinity of the entrance to the Fallopian tube. From the quantity of the mucus the ovum glides down to the cervix and remains there, because the tissues are more healthy, perhaps. In two cases of *placenta prævia* that he had knowledge of pregnancy occurred some time after treatment, with a previous history of sterility, or of miscarriages, and, possibly the mucous membrane nearest the cervix was in a more healthy condition than that near the Fallopian tubes, or possibly there was constriction of the internal os. It seemed to him there was good reason for the belief that if the mucous membrane at the fundus is not in a good condition to nourish the ovum and to hold it, it falls to the internal os and is there

held, and there is a possible *placenta prævia* at full term. He wished to know if in Professor Etheridge's case there was any previous knowledge of uterine disease. Professor Etheridge replied that there was none, the woman was a healthy Scotch woman.

PROFESSOR ETHERIDGE asked whether *placenta prævia* is a common thing in animals.

DR. SAWYER replied that he had seen a mare throw off her placenta before she threw her colt, and in fact she died without throwing the colt. He said further that he believed cervical pregnancy is generally recognized as being secondary to another thrown off from the fundus; that being the case, why not a secondary attachment or lodgment of the ovum at the lower segment of the uterus, as well as in the cervix itself. He believed the majority of authorities is against the idea of cervical pregnancy in the abstract, but he thought Dr. Bartlett considered it possible to conceive in the cervix.

THE PRESIDENT said there might be disease of the uterus there, and then comes the question whether that is the sole cause, or one of the many causes. The question had been asked whether *placenta prævia* is of frequent occurrence among prostitutes, women who might be supposed to be anxious not to become pregnant, and he thought it had been answered in the negative.

DR. SAWYER asked if the PRESIDENT's theory was correct and his observations had been confirmatory of it, how is it that Spiegelberg can say that many primiparæ, young, healthy women miscarry on account of *placenta prævia*.

DR. SAWYER thought that pregnancy itself was infrequent among prostitutes.

DR. H. P. NEWMAN mentioned a rare case which had lately

come to his notice, namely, a complete central implantation of the placenta, in which no hæmorrhage had occurred throughout the entire pregnancy until the very last days of gestation.

Ten days prior to delivery at full term there was the first appearance of bleeding,—easily checked by assuming the recumbent posture; and it was not until five days later that the hæmorrhage became at all abundant.

Delivery took place on Tuesday, April 13th.

On the preceding Friday Dr. R. N. Hall was called, and diagnosed *placenta prævia*, using the tampon.

I first saw the case in consultation with Dr. Hall on Tuesday morning.

The repeated tamponing and use of the colpeurynter the night before, had had the effect of gradually bringing on labor pains, and softening and dilating the cervix to the diameter of nearly two inches.

A digital examination revealed nothing but a thick placental surface upon all sides, covering, as we afterwards found, the entire lower segment of the uterus.

By bimanual palpation we made out a shoulder presentation (left dorso-anterior), and decided on immediate delivery.

Every preparation being made to control hæmorrhage, the placenta was carefully separated from its uterine attachments upon the left side, and the right hand carried upward between the membranes and uterine walls.

When the feet were reached the sac was ruptured, podalic version performed, and the child extracted.

Meanwhile Dr. Hall had followed up the evacuation of the uterus by firm bimanual pressure upon the uterus through the abdominal walls.

The placenta, which was a large one, and pretty evenly distributed upon all sides, was separated from its remaining attachments, and removed as speedily as possible.

The entire procedure was accomplished in less than five minutes, and the hæmorrhage was not excessive considering the gravity of the situation.

The child was saved, and notwithstanding the amount of blood lost by the mother at and previous to delivery, she convalesced rapidly, and is now up and about.

She is a strong, healthy woman of middle age, has borne seven children, and has had three miscarriages.

With the exception of rapid childbearing, a laceration of cervix, and one faulty presentation necessitating version, her former history has no particular interest.

In closing the discussion DR. BARTLETT said, that in a paper written years ago he had expressed an opinion that *placenta prævia* was one of the simplest of the *errores loci* of the ovum, that the true site of the placenta, when *prævia*, was the cavity of the cervix, that is, below the *os internum*, or the so-called ring of Bandl. Dr. Bartlett took occasion to emphasize his conviction of the truth of the position taken by him in the paper referred to. In the case now before the SOCIETY corroboration of his idea might be found. An ovum resting in the comparatively large cavity of the uterus would take root on the surface to which it chanced to be more nearly apposed. An ovum arrested in the much more circumscribed cavity of the neck might secure a more general, and in some rare instances, a complete attachment to surrounding uterine tissues.

W. W. JAGGARD, M. D., *Editor*.

2330 Indiana Ave.

14th June, 1886.

FOREIGN CORRESPONDENCE.

To the Editors of the CHICAGO MEDICAL JOURNAL AND EXAMINER,

Gentlemen:

The third annual meeting of the Italian Surgical Society was held in Rome on the 19th, 20th and 21st of April. President Durante occupied the chair, and after an appropriate address opened the meeting for work.

Professor Trombetta, of Messina, read the first paper on the total extirpation of the thyroid gland, and on the strumous cachexia which may occur after the operation, as was first called to our attention by Tuillard and Köcher. He had performed this operation over a year ago, and the patient is now enjoying good health, showing no tendency to the cachexia. He cited the results of Köcher, Baumgarten, Credè, Mikulicz, in 55 operations, of which only 15 (27 per centum) became cachectic, while 40 (73 per centum) showed no tendency to it.

Professor Caselli, of Genoa, had performed five extirpations; the first seven years ago, and the last two years ago. The patients are at present in the best of health, except the third case, which died three days after the operation. Professor Ruggi also reported five operations. Two ended in cachexia, and three are well. Professors Ceccherelli and D'Antona each reported three cases.

Dr. Granati reported a very strange case of laparotomy and caesarian operation, which, if it were not for the well-known

truthfulness of the doctor, and the fact of its being vouched for by equally well-known physicians, would seem incredible. A country-woman, 23 years old, and unmarried, became pregnant. Being almost at full term, and wishing to conceal her condition, she attempted to produce a miscarriage upon herself by passing a long knitting needle into the vagina so as to puncture the amniotic sac. She had punctured four or five times the anterior lip of the neck of the womb, but with negative results. Wishing to avoid a medical examination, which was threatened by her employers, on the 28th of last March, she took a large kitchen knife, and with it opened her abdomen on the right side, making an oblique wound from within outwards and from below upwards of about 12 centm. in length. She also incised the uterus in the same manner and attempted to draw out the fœtus. But this being too large to pass through the wound, she severed an arm, and the head from the trunk, so as to reduce it in volume, and by so doing she was enabled to extract the whole fœtus. Having emptied the uterus also by taking out the placenta, she put a large bandage around her belly, strongly tightened, got up from bed, and hid the fœtus in the mattress. Then she dressed herself, did some housework, and went to the nearest town (Viterbo) on a wagon. She visited one of her sisters, to let her know that she could not be pregnant, for her underclothes were still wet with menstrual blood. After having stopped here about two hours, she returned to her home in the country, walking about a mile, but when she reached the house she was taken with a severe vomiting and fainted. Drs. Serpieri and Baliva were sent for by her parents. They found a wound as described above, and a mass of small intestines protruding. They replaced these, and dressed the wound as the case required.

Not the least sign of a peritonitis has ensued, excepting a slight tenderness around the wound. There has been no vomiting; no hiccough; very little thirst; the tongue has been rosy and moist, and the alvine discharges normal. The highest temperature has been $38\frac{1}{2}^{\circ}$ C. (101° F.); the pulse never above hundred. The patient has always slept well and eaten well. No complications have arisen in the uterus and its appendages. The lochial discharges have been normal. At present, 21 days after the wound was inflicted, the abdominal wound still suppurates and is not yet closed. She constantly denied any accomplices, and insisted that the punctures in the uterus and the laparotomy have been done exclusively by herself. This case is really extraordinary.

Ruggi reported several cases operated on for tumors on the head and neck. Caselli desired to know if the members ever observed any cardiac or respiratory disturbances following a stretching, displacement or lesion of any kind of the pneumogastric nerve. He had lost two cases in over a hundred operations, in which he had been obliged to stretch or displace the nerve. He favored the incision of the nerve, rather than irritating it. Ferrari had seen this procedure done by Volkmann. He thought the cause to be in the chemical irritation of the antiseptic used in the operation. Durante recalled an operation for the removal of a sarcoma of the neck, during which he had been obliged to dissect, stretch and displace the nerve. A month after the patient began to complain of some disturbance of respiration.

Durante read an elaborate paper on his new process of resection of the knee joint. His operation consists in removing the bony tissue from the two articular extremities of the femur and tibia in such a manner that the wedge formed of the tibial

enters an analogous space made in the femur. By so doing we obtain an exact approximation of the bony surfaces without any danger of lateral displacement. To avoid any antero-posterior displacement, he preserves the patella, by taking off only the cartilaginous layer and fixing it by means of a Thiersch nail to the head of the tibia. He has had good results in four operations.

Triconi read a paper on suppuration due to micro-organisms. His results do not differ from those of Rossbach, Garré, etc., with the exception that he has found in abscesses and boils only one staphylococcus, which he claims to be specific. It was not found in the blood and does not produce osteomyelitis.

Following this paper, the same author read another, on senile gangrene. He drew the following conclusions: 1. Senile gangrene is due to a small bacillus, short and thin, with rounded extremities, with a spore in the center or in the sides. 2. This bacillus circulates in the blood of patients affected with senile gangrene (has seen it three times). 3. It exists in the gangrenous icor, in the demarcation line, in the blood, in the heart of the cadaver, and in the lymphatic spaces of the skin and subcutaneous tissue. 4. Experiments of culture can be made in gelatine, in beef tea, in agaragar, in blood serum, and potatoes. 5. Colors well with aniline, especially red and violet. He has transmitted the disease to calves, rabbits, and rats.

Ceci reported a case of rupture of the tendon of the patella at its insertion in the tibia. He sutured it and had a good result.

Lampugnani reported 166 successful orthopedic operations of the bones.

Margary sent a paper on the treatment of flat foot, by the extirpation of the astragalus.

D'Antona read a very interesting paper on renal surgery, reporting seven nephrectomies.

Caselli reported three cases of laparotomy. The last for the treatment of a purulent peritonitis. He washed the abdominal cavity every two hours for the first two days with an antiseptic solution, and had good success. This is the first case of the kind ever treated in Italy in such a manner.

Ceci impressed the SOCIETY by presenting a successful extirpation of an enlarged spleen. The patient was a female, only 17 years old, and not well developed. The operation was performed on the 20th of last March, in the Pammatone Hospital at Genoa. The bichloride of methylene was first used as an anæsthetic, but the narcosis was slow and irregular. An incision 23 centm. long was made in the *linea alba*, but during the hæmostasia of the abdominal walls, symptoms of suffocation supervened, and the operation was interrupted for half an hour. Chloroform was then substituted for the bichloride of methylene with good effect. The enlarged spleen was drawn through the wound, and the peduncle, 13 centm. large, was ligated with three sutures. Very little blood was lost, and the operation lasted one hour and a half. The extracted spleen weighed 2,400 grams, or 1-16th the weight of the body of the patient. A furious delirium followed and lasted until the next morning. After this there appeared a rapidly progressive shock, and the temperature went down to 35.8° C. (96.5° Fah.).

This danger having been overcome, the pulse became very rapid, with impossibility of counting it, the respiration

60 to 80. This condition lasted two days. Great benefit was derived from oxygen inhalations and from nourishing and stimulating food given by enemata. The respiration fell to 30 and the pulse 120. On the fourth day fever appeared. On the eighth the dressing was changed. Suppuration was found in the line of the sutures, and purulent peritonitis. This septic process was immediately aborted by energetic disinfection. Erysipelas of the abdominal walls then followed, and was also overcome. On the 16th day Professor Ceci declared the patient out of danger, and at present (a month after) is almost well. This is the first operation of the kind attempted in Genoa, and the second in Italy with a recovery, the fortieth on record, and the eighth with a cure.

Durante related two cases in which he had made an artificial anus, as a preparatory treatment in severe diseases of the rectum.

Ceccherelli reported a case of laparotomy for a foetal inclusion. The patient was a girl 11 years old, who for years had suffered pains in the abdomen and had noticed a tumor on the left side. A diagnosis was made of a multilocular ovarian cyst, with calcareous patches in the walls of the cyst. Ovariectomy was performed, and in 15 days the patient was well. On examining the tumor it was found to be a foetal inclusion, and precisely of a type known as *engastro-amorphus*.

Mugnai reported a number of experiments made in the surgical clinique of Rome, on local anæsthesia produced by hypodermic injections of a 5 per centum solution of cocaine. He had been able to do several operations such as external urethrotomy, extirpation of a sarcoma of the inguinal re-

gion, two removals of testicles, etc. Professor Caselli confirmed these results, and believed that with cocaine we can do two-thirds of surgery without using the usual anæsthetics.

Lampiasi reported two cases of ligature of the subclavian artery.

Postempski presented two cases of echinococcus of the liver treated with the Recamier caustic. In both cases he had hernia of the abdominal viscera. In one, a protrusion of the stomach, and in the other of the small intestines.

Mazzoni read a paper on intestinal resection for gangrenous herniæ. He had a successful result in one case. The statistics show that in Italy, up to 1884, the results have not been good. Mazznechelli had three deaths in four operations. But lately the results have been better. In 15 operations only five died, three from pre-existing peritonitis, and two from other causes. He advised silk or catgut for sutures. The surgeon should have no fear of resecting as much tissue as necessary, for it is imperative to reach the sound tissue.

Torretta spoke on hip-joint disease. He believes in early resections, for he claims they will give better results than the palliative or expectant treatment.

Other papers of little importance were read and discussed, after which the committee on nomination presented the following list of names, to act as officers for the ensuing year:

A. Caselli, president; A. D'Antona, A. Ceci, vice-presidents; Caneva, secretary.

The retiring president, after having reviewed the scientific work of the meeting, thanked the members of the

society for their papers and for the interest and harmony shown in the discussions; hailed at Genoa as the next place of meeting, and amid a general applause declared the third meeting of the Italian Surgical Society adjourned.

A. LAGORIO.

Chiavari, Italy, May, 1886.

PROFESSOR CREDE'S CLINIC IN LIEPSIC.

To the Editors of the CHICAGO MEDICAL JOURNAL AND EXAMINER:

GENTLEMEN.—I spent several days at Leipsic on my way from Bremen to Vienna, and was delighted with the cordial manner in which I was received by Professor Credé, though I had nothing but my card as an introduction.

He is sixty-six years old, low in stature, heavy built, wears a thick head of white hair which he combs directly back, moves rapidly, is full of energy, and a thorough believer in the peculiar views that he holds and practices in the lying-in wards of the hospital of which he has charge.

I saw laparotomy performed twice by Dr. Säger, Professor Credé's assistant, who has lately become quite celebrated throughout Europe by his successes in doing the caesarean section. These cases were for the removal of the ovaries for the relief of uterine fibroids.

The Lister spray was kept playing in the room one hour before the operations began, but was removed as soon as the patient was narcotized and everything ready for the operation.

The incision in the median line was about three inches long, the ovaries were ligatured with silk, the stump was cauterized slightly with the thermo-cautery, dusted over

with iodoform, and the incision in the median line closed by stitches put in about one-fourth of an inch apart, the line of union being covered with the same drug followed by a thick layer of iodoform gauze and absorbent cotton. In answer to the inquiry as to the benefit derived from this treatment in this class of cases, I was told that so far it had been good, that while the tumor in some cases did not lessen in size, it ceased to grow and the hæmorrhage being arrested the patients generally rapidly improved.

I was fortunate in visiting Professor Credé just at the time when he was giving his lectures on his management of the afterbirth.

After the clinic I always followed the Doctor around the wards to visit and examine the women lately delivered. Every case was carefully looked over, and the card that recorded the temperature and pulse was closely inspected. Each patient had on a large cloth pinned in the manner that a diaper is applied to an infant. Beneath this cloth, covering the entire genitals, was a thick layer of absorbent cotton.

He unpinned the diaper, took off the cotton, smelled of it, asked how long it had been on, and directed as to how frequently it should be applied in the future. Besides this he examined the contour of the womb through the abdominal walls, usually made friction over it for a few moments with his hand, and if the organ appeared larger than he thought it ought to be, gave the patient directions how to repeat at stated intervals the same process herself. Among the cases that we passed there was one in which the cotton removed smelled terribly. I asked, "Professor,

is this the way you manage all your cases, including the one with foul discharge?" His reply was that this was his entire treatment.

Fearing still that he did not fully comprehend my meaning, I asked again, "What do you do to counteract this bad odor." His reply was, "*I just let it stink.*"

I asked him farther, how often he found his pressing-out process for the removal of the afterbirth to fail him, making it necessary to introduce the hand into the womb or vagina to accomplish the same. Turning to his assistant, who is full of figures and statistics—and telling him to answer me that question, the reply was only three times in the last year in a series of nearly 600 deliveries. He farther explained, that in none of these three cases was the labour a normal one. One was a case of placenta prævia, one a case of miscarriage at six months, and the other followed the removal of a dead fœtus with extreme uterine inertia. Professor Credé has just had issued from the press a work entitled, "*Gesunde und Kranke Wöchnerinnen.*"

After seeing the man himself and something of his practice I have read with more than ordinary interest this work, which he tells us contains the carefully kept records as to pulse, temperature, etc., of over 7,000 patients, running through a period of over twenty years. Among the fundamental facts with which the Doctor begins this work, is that an increase of temperature and pulse-rate is not always a sign of the existence of a true pathological process requiring our active interference, disturbances of the nervous system, derangements of the alimentary tract, slight inflammatory processes in the mammary glands, are

among the causes that may increase the bodily temperature and the pulse frequently, without being a source of anxiety to the attending physician.

Again Professor Credé says that a solution of continuity of the surface of the genital tract is an almost universal outcome of every case of childbirth.

To avoid as much as possible the wounding of this canal, and especially the mouth of the womb, he says that all *internal* examinations should be forbidden or only resorted to in extreme cases. Lying-in women should never be used as material for the instruction of students, where such instruction includes a vaginal examination. To be able to make your diagnosis as to the presentation and position of the child, by external manipulation alone, is the great landmark that separates the obstetrics of the past from that of the present.

During the last year he has found it necessary to examine the womb seven times only *per vaginam*, to assist diagnosis, and often two to four weeks will elapse without a single vaginal examination being made in the wards of his hospital. In fact, he proposes to limit such examinations to cases that require manual or instrumental assistance. Having avoided as much as possible the wounding of the genital tract by abstaining from manual examination we still have a more or less wounded surface as a natural result of the pressure that has been brought to bear upon the parts during the passage of the child through the womb and vagina.

“How are you going to manage this wound that is hidden from view and that cannot be treated upon the general

principles that underlie the management of wounds in surgical practice ?” His answer is, “*Let it alone.*” To vindicate this practice he does not believe in the autogenic origin of effete matters inside the body that are capable of producing the contamination of the blood by being absorbed by these open wounds that follow labour.

In other words the lochial discharge, though varying vastly in quality and quantity, only becomes a source of septic poisoning to the patient when a *materies morbi* is allowed to gain access to the genital tract through the medium of the hand of the accoucheur or some form of instrument introduced into the same.

In accordance with this view he takes no pains to separate patients who are suffering from puerperal processes from those lately confined but who are perfectly well. As long as the septic process is local in character your prognosis is favorable, but as soon as you have “*allgemeine vergiftungen*” your case is one that will result almost assuredly fatally.

Where blood-clots and portions of the membranes fail to come away with the afterbirth he thinks it best to let them alone and allow them to pass spontaneously, rather than remove them either manually or instrumentally, thus saving the patient the great danger of being poisoned by the access of germs to the vaginal or uterine tract.

He gives several cases to illustrate the bad consequences of introducing the hand or fingers into the vagina, among them one of a woman who had a premature labour, the child only living 24 hours. She did well until the 9th day, at which date one of the assistants (unauthorized) intro-

duced his hand into the vagina and finding the womb open and a clot of considerable size inside of it, he proceeded to remove the same.

Within a few hours after this seemingly simple operation the patient was taken with a severe chill, followed by a high fever and died on the 17th day after her confinement. The post mortem showed the entire inner surface of the womb to be covered by a pyogenic membrane, the uterine veins engorged and containing pus and a lobular pneumonia as a result of a secondary metastatic process.

The only treatment that this patient received was quinia, wine and camphor. In a rather extensive acquaintance with obstetricians and gynæcologists of Europe one finds unfortunately the most of them astride of a hobby which they ride through good and evil report. Admitting Professor Crédé's idea, that we generally interfere too much in the management of our cases of labour, yet in the case above described would not a deviation from the plan in the way of washing out the woman's womb as soon as the first signs of fever, etc., made their appearance have added greatly to her chances of recovery? His antisepsis consists in keeping the external parts clean, paying no attention to anything within the vaginal orifice. To facilitate this he cuts the hair around the genitals of the woman short with the scissors at the time of or just before her confinement.

Speaking of the use of quinia and digitalis in the treatment of the puerperal process he says that they are totally worthless, or to quote, "dass sie auf den Vergiftungsvorgang nicht den geringsten Einfluss ausüben."

Ether and camphor hypodermically and wine and cognac by the mouth are the remedies upon which he relies. Though perhaps I have already extended this article to a length that will encroach too much on the space that I ought to occupy in the columns of your JOURNAL, I trust that the following addition from the clinic of Carl Braun bearing on the subjects that I have discussed will be thought of sufficient interest to warrant their insertion.

A week ago a woman was brought into Carl Braun's clinic and placed upon the table with the following history. Twenty-four hours before this time she had been delivered, the labour natural and the after-birth following soon after the birth of the child, but the membranes did not pass away.

She had just had a severe chill and her temperature was 40.6° R.

A large blunt curette was introduced into the womb, the retained membranes were scraped away and the entire inner surface of the womb was *gently* scraped out.

The womb was now washed out with two litres of a solution of bichloride of mercury, one part to 4,000, and this was followed immediately by a second washing out with thymol, one part to 1,000.

The last washing was done to prevent the possibility of mercurial poisoning that might have followed the use of the first remedy. Eighteen hours after this treatment this patient's temperature fell to normal, and one week after this operation she walked into the clinic to show us that she was entirely well. In connection with this case Braun remarked that they had lost a case this spring whose initial symptoms

and history had been similar to those of this patient, but in which the active treatment pursued in this last case was not instituted until three days after her chill, and that during this time the septic poisoning had become generally disseminated through her system and no local treatment would arrest the process. Professor Braun, while lecturing on these cases, took occasion to refer to the Credé method of the management of the after-birth, and held that in practicing it you would frequently fail to get the *entire* secundines, that, although the after-birth might come away, the membranes might still remain in the uterus.

Farther than this, where portions of the membranes remained in the womb, his plan was to remove them at once, and if it could not be done without the blunt curette such removal should always be followed by a thorough washing out of the womb with an antiseptic solution. I have some interesting surgical notes from the clinic of Professor Tiersch, of Leipsic, which I shall include in my next letter.

W. S. CALDWELL.

VIENNA, AUSTRIA,

May 29, 1886.

DOMESTIC CORRESPONDENCE.

NOTES OF MEDICO-LEGAL CASES OF NERVOUS AND MENTAL DISEASE. *By S. V. CLEVINGER, M. D., Consulting Physician to Michael Reese Hospital, etc., etc.*

To the Editors of the CHICAGO MEDICAL JOURNAL AND EXAMINER :

GENTLEMEN.—I send you herewith notes of some of the medico-legal cases in which I was recently engaged as an expert, and which presented many points of general and special interest to physicians and lawyers. Although outlines only are given below, yet these may serve as indices to the cases which are recorded in full by the courts and attorneys, where use for details may be found.

PARANOIA.

State vs. Otto Funk.—This individual was well known as the book-thief and dynamiter. His life was that of the typical paranoiac. He studied at the Chicago University and filled his rooms with books stolen from the public library of the city, between one and two thousand volumes, it is said. He had a picture of a pretty nun on his wall before which he would spend hours. Finally he discovered a young lady who resembled the one in the picture, and for years annoyed her with his attentions. As she repelled him, he dug a trench in the rear of the University and at one end of it placed an ingeniously constructed trap for the purpose of abducting her.

I asked him, when he was in prison, what his intentions were with regard to her, and he stated that he would have indelibly marked her forehead with "Variety is the spice of life," and then let her go. But, said I, "You had many opportunities to do this in the college building without resorting to such troublesome methods as digging pit-falls." He replied, "I never thought of that."

Among the cart-loads of books recovered from Funk was a cake of dynamite. He had no very definite ideas as to what he intended doing with it though it must have had some connection with certain reformatory and socialistic schemes he entertained.

Like Guiteau he had written a book, though it had not been printed. The wording was sophomoric and egotistical. He was the central figure on every page. As revealed by his scribblings, he delighted in imagining himself wrongfully dispossessed of a title to nobility and an immense fortune. He repudiated his plebeian parents and their uneuphonious name, assuming Talcott as a cognomen. According to his narrative, he was learned, mysterious, handsome and irresistible in love. His erotism seems to have been platonic, however.

Spitzka describes such characters as having "bizarre rather than productive conceits, their reasoning as paradoxical rather than logical, and their argumentation tricky and shrewd rather than substantial. To the laity such subjects often appear to be brighter than the ordinary run of mankind, because commonly oddity is mistaken for brilliancy and unblushing pretense for merit." There was a marked occipital flattening, such as Morel noticed as possessed by some paranoiacs, with a not very noticeable asymmetry of the skull and tectoccephalism.

He was committed to the Elgin Asylum, from which he escaped and managed to enter the Harvard Theological School, in Cambridge, Massachusetts. He stole large quantities of books from the library of this institution, was detected and committed suicide in prison.

EPILEPTIC INSANITY.

State vs. Gardner. An itinerant dentist had neglected and abused his wife in many ways. It was proven that she had purchased a revolver, and a week later had shot her husband and infant and attempted her own life. At the hospital she aroused from a stupor and asked to be allowed to return home, or that her husband might be summoned. She plainly had no recollection of the tragedy. At the request of the Woman's Club, of Chicago, and Attorney Westover, I examined into the case and testified that the act was consistent with the belief that Mrs. Gardner was suffering from larvated epileptic insanity. It transpired in the evidence that her father was an epileptic and that Mrs. G. had frequent attacks of facial spasms, "Jacksonian" epilepsy and *petit mal*. The deliberation with which she set about the slaughter had no weight against my theory, notwithstanding the ground held by some alienists, that absence of design is the main characteristic of furious acts of the epileptic insane.

Echeverria, in the *Journal of Mental Science*, London, April, 1885, concludes an examination of this question as follows:

"Sudden impulsive acts related to the psychological manifestations of epilepsy very often evince in their automatic execution a coherent planned purpose.

"Epileptics cannot be held responsible for any act of vio-

lence perpetrated during their unconscious automatism, which they have no power to control or capacity to judge."

The testimony was uniformly to the effect that she had been a devoted wife and that she was wholly unconscious at the time of the killing. Judge Moran, before whom the case was tried, was evidently convinced of the irresponsibility of Mrs. Gardner, and the jury unhesitatingly acquitted her.

SPINAL CONCUSSION.

Holland vs. C. & E. I. R. R. Co. February 16, 1883, Isaac W. Holland, a conductor on a suburban passenger train of the C. & R. I. R. R., was thrown forward by a collision, against the front of his car, rebounding backward, striking the last dorsal vertebræ upon the solid wooden top part of a seat, thence whirling to the floor. When he arose he felt sharp tingling sensations in his back, neck, head and extremities. He walked about, however, at the time, and assisted in getting his train into shape. The force of the collision may be judged from both locomotives being wrecked. At this date he weighed 197 pounds, and two years later only 102 pounds.

March 25th, 1883, the pain in his back became so severe as to necessitate his giving up work, but he rallied for a few days, struggling manfully against his fate, with slight remissions, until December 9th, 1883, when he became bedridden, in which condition he has remained ever since.

In December, 1884, at the request of plaintiff's attorneys, Messrs. Kretzinger, I visited and examined Mr. Holland, and found complete harmony between the subjective symptoms and the objective signs of his disorder. He was

in a darkened room, his pupils were dilated and he suffered from photophobia, constant pain in his back; noises made his head ache. He had not had a good night's sleep for a year. His appetite was miserable. In his arms and legs, as well as rest of body, temperature was subnormal, and formication and numbness were constant. Pain began in the dorsal region and shot up to his head. Muscular motions were feeble, emaciation was extreme. He was unable to move himself in bed without assistance. Genital power and sexual desire were extinguished. He had had several epileptiform convulsions in the past year.

Tested with the æsthesiometer, there was a diminished ability to determine or locate points touched. With hyper-æsthesia there was an increased sensory response to both the galvanic and faradic currents, indicative of irritability, but no reactions of degeneration.

Dr. Bettman, the oculist, at my request, made an ophthalmoscopic examination of the retinae, without atropine, as the pupils were sufficiently dilated, and found anæmic discs. Fibrillary tremors of the muscles of arms and legs were noticeable. The tendon reflexes were greatly exaggerated, the stroke below the patellæ caused intense pain in the back. Limb coördination was decidedly impaired, he could not touch his nose tip with his eyes closed.

Plaintiff brought suit against the Eastern Illinois R. R. Co., as the one responsible for the injuries he had sustained, claiming \$40,000 damages for total disability. The trial in Judge Gary's court, May, 1885, lasted eight days.

Simulation was the main claim for the defence and Page's little work on "Injuries to the Spine" was used by defendant's attorneys to establish the grounds taken.

Plaintiff's attorney made excellent use of Ericksen, Ross, Gowers, Hartshorne, Pavy, and numerous other medico-legal, neurological, surgical and general medical works, to show the consistency of Holland's condition with the usual phenomena of spinal concussion and to defeat the claim of the rail road that he was undergoing voluntary starvation.

The jury awarded plaintiff \$25,000 damages and the case went to the appellate court, appellants claiming the amount to be excessive. In March, 1886, the award of the lower court was approved and the judgment sustained.

INSANITY A SYMPTOM OF BODILY DISEASE.

Crandall vs. Accident Insurance Company of North America.—An action was brought in Judge Wylie's United States District Court, to recover on a \$10,000 policy. Mr. Thomas Bates, attorney for defendant, held that Mr. Crandall had committed suicide while insane and that provision had been made in the policy against death or injury arising from diseased conditions of the holder. Mr. Bates engaged me to testify as to the relationship existing between insanity and bodily disease.

I held that insanity was a disease of the mind, just as neuralgia was a disease of the nerve function, but it was only a *symptom* of a bodily disease. The distinction being that the mind as an effect of normal bodily workings could be deranged only through some improper action of bodily organs. It is inconceivable that the time-keeping of a clock should be irregular or cease, unless the mechanism were out of adjustment. The horology of the clock and mentality may be aberrant, but both conditions imply as causes illy-working mechanism.

The engineer speaks of his locomotive "working crazily," but knows that it is due to imperfection in his machine, hence its "craziness" is a symptom, and cannot exist as a condition independent of the engine.

Plaintiff's attorney asked if such views had not won for those who held them the title of "physical mediacists." I stated that such a name might apply as contradistinguishing them from metaphysicians, who held that the body had no connection with the mind.

The roof is the "physicalmedium" that shelters us from the rain, the ear and eye are the "physical media" by which we hear and see, the brain in conjunction with other bodily parts are "physical media" for mental action, and a man might as well be expected to walk without the "physical media" of legs as to think without his head.

I refused to undertake a definition of insanity as the law of relativity rendered any definition impossible. An approximation to one was contained in the statement that it was a symptom of bodily disease. The same difficulty lies in a consideration of what constitutes disease in general. This might be absence of health, and health is absence of disease. So far as that is concerned an absolute definition of anything is impossible.

The jury returned a special verdict and Judge Wylie decided in favor of the plaintiff upon technical points, having no reference to whether the mind could exist independently of the body or not.

The decision upon appeal will be one of the most important in insurance cases, as it will affect all life insurance companies.

*To the Editors of the CHICAGO MEDICAL JOURNAL
AND EXAMINER:*

Gentlemen.—A pamphlet copy of an article on Insane Hospital Supervision, reprinted from the CHICAGO MEDICAL JOURNAL AND EXAMINER for April, has come under my notice—not having been sent me by the author or publisher, nor indeed sent to me by any person—which is in substance an assault upon the State Board of Public Charities of Illinois, for failing to do what the writer conceives to have been its duty, in the matter of the recent investigation by it of the management of the Cook County Insane Hospital.

No member of that board will, I am sure, object to any fair or legitimate criticism of its official action.

I am constrained, however, by my own sense of fairness, not being myself a member of the board, to ask you to print in your May number the following explicit and categorical denial of some of the misstatements contained in the article referred to. Dr. Spitzka may perhaps be excused for his errors, on the ground that he does not reside in Illinois, was not present at the investigation, can not have seen the testimony (which has not been printed), and is therefore in the favorable condition of mind for a reviewer described by Sydney Smith, when he said that he never read a book before reviewing it, lest it should prejudice his judgment.

(1). The State Board did not, in its last biennial report, “commend the Cook County Insane Hospital management as equal to the best State asylum,” nor speak of it in “eulogistic terms,” nor “laud the superintendent for reducing restraint.” It said:

“In relation to restraint, Dr. Spray remarks,” etc. It

merely quotes his words, without comment of any sort. It does not even assent to their truth.

It also said:

"The institution is conducted in the same manner as are the State hospitals, and the same regard is had to cleanliness, ventilation and the care and comfort of patients. In most respects, this asylum compares favorably with our State institutions. In only one ward was the hospital odor found to be offensive, and steps were being taken to remedy the matter."

The asylum was visited in August, and the report does not purport to give anything but the appearance of the institution to the eye of the observer. It was precisely what it is said to have been. It was clean, it was well aired, and the patients seemed to be comfortable. In these respects, it compared favorably with our State institutions. It was conducted "in the same manner as" the State hospitals; that is to say, not in the same manner as an ordinary county almshouse. It had the organization of a hospital, with a medical superintendent, residing in the institution, assistant physicians, matron, a clerk, a druggist, supervisors, attendants on the wards, night watches, etc., which almshouses as a rule have not. But this is far from saying that the management was equal to the best State asylum." The board had repeatedly expressed its opinion of the management in uncomplimentary terms, particularly in the report of 1878. It has uniformly and persistently held up the system of appointments and control to public opprobrium, when not a newspaper in Chicago would reprint its comments.

(2). The Chicago Medical Society and the Citizens' Association did not, in 1884, "request the board to unite with them in investigating" the institution, nor did either of them do so.

(3). The governor did not, in 1886, "order the board to make an investigation." On the contrary, he declined to issue any order, for the reason that he had no power, under the statute, to do anything of the kind.

(4). The board was not "desirous to screen the administration during 1883-4," and it did not screen it. If the board screened it, then Dr. Spitzka has also screened it. Nearly every statement made by him as to the condition of the asylum is quoted (for the most part *ipsissimis verbis*) from the report made by the board, and without giving credit (except in isolated instances) for his quotations. Either by accident or design, he has so used language as to convey the false impression that he is revealing what the board endeavored to conceal.

(5). The board did not "enforce the legal rules of evidence against Dr. Kiernan" and "fail to enforce them in his favor." Judge Grimshaw, who presided, a lawyer of half a century's experience and of the highest standing, repeatedly stated that in an investigation of this character (which was not a trial) it would be impossible to enforce strict legal rules of evidence; and that he was disposed to allow to both sides whatever degree of latitude might be requisite, in order to ascertain to the satisfaction of the board all the facts in the case, but that he would be obliged to keep the witnesses as close to the point at issue as possible. It was his manifest desire to treat both sides with

absolute impartiality, and I venture to say that not a disinterested spectator who was present at any session of the investigation will deny this assertion.

(6). The board did not "refuse to allow Dr. Kiernan to introduce any direct evidence after the rebuttal evidence of the accused." It considered that he had substantially proved his charges; the defence, if it can be so called, had virtually broken down: the public was weary of the whole matter; and no further evidence was offered by him, nor was any required.

(7). The board did not "refuse to render him assistance" in procuring witnesses. It gave him all the assistance in its power. The law does not confer upon it power to summon witnesses, and of course it cannot compel their attendance. It did issue subpoenas, on its own responsibility, for every witness named by him, but having no officer at its command to serve the same, it gave them to Dr. Kiernan to serve, which was all that it could do.

(8). The board did not "refuse at first," or at any other time, "to allow him legal aid." It may have expressed the opinion that he needed none. What the force of the expression "at first" may be, I have no idea. He had precisely the same assistance from the attorney for the Citizens' Association at first, that he had at any time during the investigation.

I am impelled to ask how Dr. Spitzka assumes to know the details of a trial or investigation at which he was not present, and on what authority he bases charges so utterly flimsy and unsupported.

(9). This is the first time that I at least have heard that

the request for an investigation came from a "Chicago bar committee"—who were they?—or from "the editors of influential papers and leading citizens," other than the Citizens' Association, the Woman's Club and the Chicago Medical Society.

Into any examination of the other inaccuracies of statement into which Dr. Spitzka has fallen, when he has undertaken to go outside of the record, I have neither the time nor the inclination to enter.

His conclusions are vitiated, first, by the want of connexion between the conclusion and the premises; second, by the erroneous character of the premises which he assumes; and third, by his evident desire to turn this investigation to special account as an argument in favor of a preconceived conclusion in favor of State commissions in lunacy.

I may be permitted to remark that the State Board of Charities of Illinois, which he assails, has declared itself in favor of a State commissioner in lunacy, and that a bill embodying this proposition has been introduced in the legislature of Illinois, with the sanction of its approval and endorsement. But the legislature would not hear to it. He is fighting his allies, instead of his enemies.

Both Dr. Kiernan and Dr. Spray seem to think—naturally enough, perhaps—that THEY were the parties on trial before the bar of public opinion. The State commissioners utterly failed to disabuse their minds of this impression, and had an arduous task to keep the investigation, which lasted for more than a week, from degenerating into an interminable wrangle over personalities. The real issue

was not their individual responsibility for the existing condition of affairs (which it was plainly beyond the power of either of them to remedy), but the responsibility of the COUNTY BOARD. It was the county board which was on trial; and the verdict was one of condemnation. If this verdict is not in accordance with the evidence, what should have been the form of verdict rendered?

The board had no wish to reward or punish, to help, or to injure, Dr. Kiernan, or Dr. Spray, or any one else: What it sought was the protection of *the insane*. It desired to find and apply a remedy. There is no remedy except in legislation. The legislature does not know Dr. Kiernan or Dr. Spray, nor care for either of them, except as citizens. It knows the county board; it has power over the county board; it can deal with it. The State commissioners have, in my judgment, laid the foundation for a successful appeal to the legislature at its next session for some remedial legislation.

Such attacks as those of Dr. Spitzka are calculated to injure the cause of the insane, rather than to benefit it. He simply does not understand what he is talking about.

Very respectfully,

FRED. H. WINES.

Springfield.

BOOK REVIEWS.

INSANITY AND ITS TREATMENT. *Lectures on the Treatment, Medical and Legal, of Insane Patients.* By G. FIELDING BLANDFORD, M. D., Oxon; Fellow of the Royal College of Physicians in London; late Lecturer on Psychological Medicine at the School of St. George's Hospital, London. Third Edition. Together with TYPES OF INSANITY, an Illustrated Guide in the Physical Diagnosis of Mental Disease, by ALLAN McLANE HAMILTON, M. D., one of the Consulting Physicians to the Insane Asylums of New York City, and the Hudson River State Hospital for the Insane, etc. Octavo, pp. ix, 379. New York: WILLIAM WOOD & COMPANY. Chicago: W. T. KEENER.

That this work has lived to see its third edition is evidence of its popularity and its usefulness. It is for the most part re-written, and the subject is brought down to the present time. It is not, nor is the claim made, that it is a systematic treatise, but is rather a hand-book for the use of students and practitioners—a guide for those who have to deal with insanity as it comes to them in general practice. For these it is perhaps the best work in our language; at the same time we think there are few English-speaking specialists who do not possess a copy of this work.

The appendix, on Types of Insanity, by Dr. Hamilton, adds materially to the value of the book. The nine plates illustrating the different forms of insanity are interesting and typical.

Their value in the diagnosis of mental disorders is very doubtful, as has been shown in the asylums of Venice, where the physiognomy of mental disease has been fully investigated.

H. N. M.

A TREATISE ON NERVOUS DISEASES; THEIR SYMPTOMS AND TREATMENT. *A Text-book for Students and Practitioners*, by SAMUEL G. WEBBER, M. D., *Clinical Instructor in Nervous Diseases, Harvard Medical School; Visiting Physician for diseases of the Nervous System at the Boston City Hospital; Member of the Massachusetts Medical Society; Member of the American Neurological Association, etc., etc.* Octavo, pp. ix, 415. New York: D. APPLETON & COMPANY. Chicago: A. C. McCLURG & COMPANY.

"This book was commenced with the purpose of writing briefly, and including what is most essential for the study of nervous diseases within as small a compass as possible." So reads the preface, which further states that the work is not written for specialists, but for students and general practitioners, who (presumably) have little time to read.

It belongs to the class of works that are written down, so to speak, to the level of an inferior class of readers. The work is divided into four nearly equal divisions, dealing with the diseases of the brain, spinal-cord, peripheral and sympathetic nerves, and the unclassified or functional. A chapter is devoted to the consideration of each disease, preceded by a short bibliography. As to matters of fact, there are no serious misstatements but a faulty arrangement; a series of descriptions put together without any attempt at classification renders the work of little value to the novice, for whom it was evidently written. The fifteen illustrations are too few in number to be of great value in illustrating the text.

The work seems to have been compiled for the sake of writing a book ; printed for the sake of publishing one ; and may be bought by those who desire to own a " treatise " in a good binding and of fair typographical appearance.

We are still of the opinion that the best work for the beginner in neurology is a work written for specialists and used by them.

DISEASES OF THE SPINAL CHORD. By BYROM BRAMWELL, M. D., F. R. C. P. (*Edin.*): *Lecturer on the Principles and Practices of Medicine, and on Medical Diagnosis, in the Extra Academical School of Medicine, Edinburgh ; Pathologist to the Edinburgh Royal Infirmary ; Additional Examiner in Clinical Medicine in the University of Edinburgh ; late Physician and Pathologist to the Newcastle-on-Tyne Infirmary ; formerly Medical Officer to the Tynemouth Union Work-house Hospital, the Prudhoe Memorial Convalescent Home, the Tyne Floating Hospital, etc., etc. Fifty-three colored plates, and one hundred and two fine wood engravings. Second edition. Octavo, pp. xiv, 298. New York: WILLIAM WOOD AND COMPANY. Chicago: W. T. KEENER.*

The appearance of a second edition of this work within so short a time, and its translation into the German, French and Russian languages, is presumptive evidence of its value. The German edition is the most popular text-book on the subject in use in that country.

This last edition is somewhat enlarged, and contains thirty-two additional engravings and plates. These serve to further illustrate the clear and accurate text. The addition of a chapter on concussion of the spine, and the clinical exam-

ination of "railway cases" is timely, in view of the forensic importance of these conditions.

Among the original illustrations we are pleased to note that the old favorite, "an acute bed-sore (after Charcot)" is not forgotten. We trust that beginners in this field will not infer that acute bed-sores are rare, from the fact that there has never been but one illustration for them.

H. N. M.

A PRACTICAL TREATISE ON NASAL CATARRH AND ALLIED DISEASES. By BEVERLY ROBINSON, A. M., M. D. (*Paris*); *Clinical Professor of Medicine at the Bellevue Hospital Medical College, New York; physician to St. Luke's and Charity Hospitals, etc., etc.* Second Edition, revised and enlarged, with one hundred and fifty-two wood engravings. Octavo, pp. xii., 276. New York: WILLIAM WOOD & COMPANY: Chicago: W. T. KEENER.

A comparison between the first and second editions of Prof. Robinson's treatise is exceedingly gratifying to the rhinologist. The original issue of 1880 was the first monograph of importance published on the subject in this country. It was especially adapted by its practical character and excellence to supply the urgent desire which had then arisen for a lucid exposition of the subject of nasal catarrh, and it enjoyed, in consequence, an extended popularity to which the second edition, now issued, is well worthy of inheritance.

The author struck the key-note when, in the very first pages, he demonstrated the hydra to be comprised, not of a

single affection but of twenty-nine distinct and separate diseases, and as each of the twenty-nine received mostly different and appropriate medication, the riddle of treatment approached solution.

In the new edition, the same division of the subject is retained and then enlarged upon in the subsequent text.

Two beautiful illustrations of the reticular structure of the turbinated bodies convey a clear idea of the special erectile character of this tissue upon which the several varieties of chronic rhinitis, rhinitis simplex, rhinitis hypertrophica and rhinitis atrophica so largely depend. The prophylaxis of "taking cold" is expounded in a clear and forcible manner, particularly as regards the care of the feet, cold sponge bathing, frictions and massage, clothing, temperature and mode of heating living apartments; all measures, "important to the well being of the majority of people" but "absolutely essential to the prophylaxis or cure of those affected with catarrhal inflammations of the nasal fossæ."

The author very properly insists that an acute coryza, in its incipency, and later if necessary, should be systematically treated, both as a means of immediate relief, and as a prophylactic measure against chronic pathological changes of a catarrhal nature. The universal custom of letting a cold "run its course" is certainly to be deprecated. How frequently do we observe an acute rhinitis, continued thus for weeks, extending to the ears, eyes, larynx and bronchi, perhaps even recurring with augmented severity, again and again throughout the season. Such neg-

lect is the primary cause of many cases of deafness, of chronic laryngitis and pharyngitis with impairment of voice, of follicular disease of the naso-pharyngeal space, and of hypertrophic nasal catarrh, not to mention pulmonary affections, still more serious because of fatal tendencies.

Cocaine is unmentioned in this connection, doubtless because its introduction followed the preparation of the text. A one to two per cent. solution applied in the form of a warm spray is the most effective of local applications. A point well taken, and from which many profit, is that ulceration of the nasal cartilages and bones, even perforation of the septum, should not invariably be adjudged syphilitic. Scrofula, catarrh, febrile diseases, *e.g.*, typhoid fever, measles, etc., certain toxic substances, as arsenic and mercury, are all regarded as causes. We have reason to believe, also, that workers in lead not uncommonly suffer from such extreme forms of atrophic nasal catarrh as to lead to perforation of the septum and ulceration of other parts.

It is impossible to enumerate all the good features of the work. Most of the more recent special surgical procedures are described and the apparatus illustrated.

It is indeed to be regretted that the galvano-cautery, now found so extremely useful in naso-pharyngeal surgery, should not have received more extended attention. The most perfect apparatus of the sort, the Seiler-Flemming battery, remains entirely unnoticed.

The phraseology of the book is clear and concise, the paper and print are fairly good, and typographical errors are few in number.

W. E. CASSELBERRY.

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VI.

BACILLUS TUBERCULOSIS. CONCLUSIONS FROM THE RESULTS OF INVESTIGATION. *By H. D. SCHMIDT, M. D., of New Orleans, La.*

In reviewing the results of my investigations into the nature of the bacterium tuberculosis and its relation to the human lungs, or other organs, it will be found that, excepting the development of this organism in the nuclei of the tubercle-cells, they correspond, perhaps, in most other points to the statements previously made by other authors. The development of the bacterium tuberculosis in, or, as it almost appears, from the protoplasm of these nuclei is a phenomenon, not only difficult to explain, but which, moreover, may yet bear importantly upon the whole bacterium tuberculosis question. Hence it is worthy to be presented to the reader in its proper light, which, however, involves a review of other obscure points in the history of the bacterium tuberculosis, especially of the manner in which this organism is said to gain access to the human lungs, or other organs.

When Koch, in 1882, announced his discovery of the bacillus tuberculosis, he asserted it to represent the original and special cause of tuberculosis, demonstrating, at the same time, the manner in which it had gained access to the human lungs as to give rise to the tubercle of tuberculosis. His explanation was mainly based upon the supposition, that these special bacteria were constantly floating in the air; and that, accordingly, some, or even one, of them would enter the human lungs during the act of inspiration; and, being carried by the inspiratory current of air to the terminations of the bronchial system, the air-vesicles, settle there upon one or the other epithelial cell, lining these minute cavities; the irritation, set up in the protoplasm of this cell by the presence of the parasite, was to be regarded as the first impulse given to the formation of the tubercle.

It is, particularly, the giant-cells of the tubercle which Koch regards as the special seat of the infectious agent; *for he says, as soon as they make their appearance in the tubercles, bacilli tuberculosis will be regularly met with; if the number of the latter in the tubercle is very limited, they will almost always be found in the giant-cells; and, then, never more than one, or a few individuals in each cell. But when, in correspondence to a more intense course of the process, the bacilli are present in large numbers, then many, fifty or more, will be found enclosed in one giant-cell. The arrangement of these organisms in the giant-cells, Koch states, often takes place in a peculiar manner, namely: If there is only one bacillus enclosed in a cell, it will mostly be found in the centre of the latter, or very little excentrically; but, if the nuclei are lying closely together near, or at one end or pole of the cell, then the bacillus will be found at

*“Die Aetiologie der Tuberculose,” von Dr. R. Koch, reviewed by Litten. “Deutsche Medizinal Zeitung,” March 24, 1884.

the other end, that is, in that part of the cell which is free from nuclei. This arrangement of the nuclei opposite to the bacillus, Koch regards as a manifestation of an "antagonism," existing between the nuclei of the giant-cell and the parasite therein enclosed, causing the former to get as far as possible away from the latter; even if the bacilli in the giant-cell increase in number, this "oppositional" grouping of the nuclei may still take place, though then, an entirely different arrangement of the bacilli is generally observed. To Koch it almost appears that with the numerical increase of the bacilli, their attitude (*Haltung*) or bearing toward the nuclei becomes more active; for, he says, they then advance more and more toward the periphery of the cells; and, inserting themselves between the nuclei, finally even break through the walls of these bodies. Besides, the destruction of the giant-cell appears to follow regularly such an increase of the bacilli; for very often, in the vicinity of giant-cells containing bacilli arranged in a radiating manner, and in a direction toward the interior of the tuberculous centre, groups of bacilli are met with, which, though not any more enclosed in brown-colored nuclei, still show the same radiating arrangement. As many transitive forms are besides met with, it cannot be doubted that such radiating groups of bacilli indicate the places of former giant-cells, of which the nuclei have disappeared, and of the contents of which only the bacilli have been left.

The above mentioned statements of Koch show that he attaches much importance to the relationship existing between the bacteria tuberculosis and the giant cells. As far as I am able to interpret these statements, he regards the appearance of these giant-cells and that of the tubercle-bacteria as occurring almost simultaneously, though it is not stated whether the bacterium gave rise to the giant-cell, or whether the latter pro-

duced the former. If the number of bacteria is very limited, Koch finds them always confined to the giant-cells, but never more than one, or a few individuals in each cell. From this I cannot but infer, that he regards these individuals as the original bacteria, carried by the inspiratory current of air to the interior of the air-vesicles of the lung, where, by irritating the protoplasm of one or the other lining epithelial cells, they give rise to the formation of a giant-cell. Although the exact nature of these giant-cells is as yet not positively known, we shall in this instance, nevertheless, suppose that they represent irritated epithelial cells, the nuclei of which have multiplied by division, while the protoplasm of the cells has simply increased in bulk without division. The inference to be drawn from Koch's observations on the giant-cells would be as follows: The bacterium, after having caused by its presence the multiplication of the original nucleus and the increase of the protoplasm of the cell, quietly remains in one corner of the latter, while the nuclei, being, as it appears, afraid of the parasite, get away as far as possible from their antagonist by withdrawing to the other corner. But, now, the bacterium also commences to increase in number by reproducing its own kind, and, as soon as its descendants are sufficiently numerous, their attitude toward the nuclei becomes more active; for, advancing like so many soldiers, toward the periphery of the cell, they commence the attack upon the nuclei by inserting themselves between these bodies, and finally conquer by breaking through their walls and by settling in their interior. Thus the "antagonism," which Koch supposes to exist between the bacteria and the nuclei of the giant-cell, leads to the destruction of the latter, and to the remaining of the former upon the field of battle.

As far as my own observations extend I may state that I

have never observed the above described phenomenon concerning the bacteria tuberculosis and the nuclei of the giant-cells, which, if true, would almost indicate that these bodies were endowed with a certain kind of instinct, manifesting itself in the "antagonism" to which Koch directs attention. On the contrary, I have met with many giant-cells containing no bacteria tuberculosis, whilst in others I found a smaller or greater number of these organisms enclosed, both in the nuclei and in the protoplasm of the cells. In the same way giant-cells are met with containing a considerable number of nuclei, arranged in line along a part of the periphery of the cell, whilst in others again they are, in smaller or larger numbers, irregularly distributed throughout the protoplasm of the cell. On the whole, I can find no reason for supposing a closer relationship to exist between the giant-cells and the bacteria tuberculosis than between the latter and the other cells of the tubercle. In those instances in which I met with bacteria tuberculosis in the giant-cells I found them either still enclosed in the nuclei or liberated from the latter by the ultimate disintegration of their protoplasm, lying free in the degenerated protoplasm of the cell. But let us now endeavor to find some plausible explanation for the presence of the bacteria tuberculosis in the nuclei of the tubercle cells, in which, as I have shown before, they make their first appearance, and to which they may gain access by different means and ways. Before, however, entering upon this discussion I shall take the liberty of quoting from Litten's review, already mentioned, Koch's views on the subject. They are as follows: "The appearance of one or some bacilli in the interior of cells, bearing an epithelioid character, must be regarded as the first stage of the origin of the tubercle. The manner in which the bacilli get into these cells can hardly be explained in any

other way but that, not being themselves endowed with spontaneous motion, they are either in the current of the blood or lymph or in the tissues of already existing tuberculous centres, taken up and carried along by tissue-elements which possess this kind of motion, as, for instance, the wandering cells. The peculiar fact that single bacilli, or small groups of them, separated from each other by one and the same, though comparatively far, distance, are frequently met with, can only be explained in this manner. Charged with such parasites, the cell is still capable of traveling considerable distances, but under the deleterious influence of the bacillus it undergoes changes which will soon cause it to stop. Whether, now, one wandering cell is destroyed and the bacilli are taken up by other cells present at the same place, and which subsequently assume an epithelioid character,—or whether, what Koch thinks to be more probable, the wandering cell, transporting the bacillus is transformed into an epithelioid cell and from this into a giant-cell must, for the present, remain undecided. In order to presume that the bacilli are originally carried along by the wandering cells and that in this manner their distribution in the tissues is effected, the following reasons may be adduced. First, the analogy with the septicæmia of the mice, in which also rod-shaped bacilli are incorporated by colorless blood-corpuscles; furthermore, the direct observation, showing that the tubercle bacilli are first taken up and transported by the wandering cells. This is best recognized in those cases in which large numbers of bacilli are introduced into the circulation, as, for instance, by injection into the veins of the ear of the rabbit. If an animal, infected in this manner, is killed at an early time, numerous leucocytes enclosing one or some bacilli are then still found in the blood; whilst even in the tissues of the lung, liver and spleen true round cells now and

then appear which, containing a single or divided nucleus, show as yet no epithelial form; that is to say, they resemble in every respect colorless blood-corpuscles, though containing tubercle bacilli. The same phenomena were observed in guinea-pigs, into the abdominal cavity of which large numbers of tubercle bacilli were injected, and which died already during the course of the first week. A third reason for the above mentioned supposition may be found in completely dead tissues, that is, in such places where the influence of living cells upon the bacilli is entirely excluded; for if here a vigorous growth of bacilli once more occurs, they will arrange themselves in entirely typically formed groups resembling the peculiar forms of bacteria-colonies in the pure culture upon the serum of blood. These forms have to be regarded as those assumed by the tubercle bacilli when developing without disturbance, and when their grouping is solely determined by those local changes of position which depend upon their growth. Every other arrangement must be regarded as caused by some other disturbance. If a too rapid increase of the bacilli within the giant-cells takes place, the latter undergo destruction in being to a certain extent burst by the bacilli pressing themselves between the walls of the nuclei. The nuclei disintegrate into minute granules, and the cell is destroyed. The further changes, taking place in the tuberculous tissues after the development of the epithelioid and the giant cells, are all of a retrograde nature. The greater part of them belongs to those processes known as coagulation-necrosis, and lead to the death of the tuberculous tissues, and to the formation of the so-called cheesy masses which are so frequently found in tuberculous centres. Generally the tubercle-bacilli disappear very soon in the cheesy masses, so that they are only met with in the younger centres (Herden), while they are almost always absent

in the older ones. In other cases, however, a simple shriveling and transformation of the tuberculous tissue into a firm connective tissue may take place after the disappearance of the bacillus-vegetation.”*

Now let us briefly review the above quotation from which we gather that the appearance of one, or some bacteria tuberculosis in the interior of cells bearing an epithelioid character, is regarded by Koch “as the first stage of the origin of the tubercle,” and that, furthermore, the manner in which the bacteria get into these cells can hardly be explained in any other way but that they themselves, being incapable of moving, must be taken up—either in the current of blood or lymph, or in the tissues of already existing tuberculous centres—and carried along by other tissue elements which possess spontaneous motion, such as the wandering cells. The conjecture concerning the transportation of the bacteria tuberculosis by means of wandering cells, appears to me very plausible, especially since I have observed the same phenomenon in the blood of lepers, where I found the bacteria lepræ adhering to the remains of colorless blood corpuscles. But with this conjecture the presence of these organisms in the tubercles of tuberculosis, and particularly in the nuclei of the tubercle cells, is as yet not explained, even not in accepting the theory of the tubercle being originally formed from wandering cells, derived from the blood or lymph, for it is obvious that the bacteria, in order to be taken up by these cells, must already be present either in these fluids, or in already existing tubercles. But as to the particular manner in which the bacteria first gain access to these fluids, or to the parenchyma of the lungs, nothing is said in this place; and, as no other satisfactory explanation on this point can be found in Litten’s review

* Page 261.

of Koch's paper, I propose to discuss the different ways and manners in which the bacteria might possibly get into the tissues of the human lungs, or other organs.

The bacteria tuberculosis, being incapable of moving spontaneously, must of course be transported from one place to another by some other agent or moving power. If, therefore, they are, as Koch asserts, constantly present in the air we breathe, it is but natural to suppose that one, or some of them might be carried, as once before mentioned, with the inspiratory current of air into the interior of the alveolar cavities of the lungs, and settle there upon some of the lining epithelial cells. Having settled upon one of these cells, however, the bacterium being motionless, is incapable of penetrating through the protoplasm of the cell into the nucleus, except by decomposing and absorbing the protoplasm before it. This phenomenon is observed among some of the more highly organized fungi, as, for instance, with the so-called potato-fungus (*Peronospora infestans*), which, though being, like the bacterium tuberculosis, incapable of moving spontaneously, nevertheless penetrates not only into the cells of the potato, but, moreover, even into the starch-granules contained therein. The penetration in this case, however, is solely effected by the inherent growth of the fungus, that is, by the lengthening of its filaments, which, in channeling their way into the interior of the cell, absorb a part of its wall. Thus, the further the fungus penetrates, the more its filaments gain in length.

Although it is not very probable, I will, for the sake of argument, suppose that the bacterium tuberculosis, after having settled upon the epithelial cell penetrates in the above-mentioned manner into the interior of the nucleus, whilst it, at the same time, increases in numbers; in this way it might even penetrate from cell to cell. But instead of proceeding with

our supposition, let us now direct our attention to the tubercle, which, according to Koch, has to originate in the epithelial cell, irritated and already partly destroyed by the bacteria. The tubercle, as we know, can only be formed by the multiplication of one or more cells, brought about by the successive division of the nucleus and the protoplasm of the original cell. The question, therefore, arises: Is a cell, which is already partly destroyed by bacteria, still capable of multiplying; or does it still possess sufficient vitality to give rise to the hundreds or thousands of cells of which a tubercle is formed? For my own part, I cannot but answer the question in the negative. But in admitting even the possibility of the tubercle arising from an epithelial cell, already crippled by bacteria, there are besides other phenomena remaining to be satisfactorily explained. One of these is the simultaneous origin of great numbers of tubercles throughout one, or even both lungs, as is frequently witnessed in acute miliary tuberculosis. In such a case, it is quite difficult to suppose that so many bacteria, as there are tubercles, had simultaneously entered the lungs, and that—while passing through the numerous bronchi and bronchioles—they should distribute themselves so nicely as to settle only in the interior of certain alveoli throughout the whole organ, separated from one another by certain, though frequently quite small, distances, as found between the respective tubercles supposed to be called forth by these bacteria. The appearance of tubercles, separated from one another by greater or lesser distances, has been explained by supposing that the bacteria are transported from one part of the lung to the other by means of the expectoration; that is to say, by the matter derived from a small cavity, and charged with bacteria, passing outward through one of the smaller bronchial tubes into the larger parent tube, and then returning through another

branch of the latter to the terminal lobules of another part of the organ. In answer to this supposition we may say, that it is possible but not very probable, as the normal direction of the secretion is from the smaller bronchi toward the larger ones, the same as that of the movements of the cilia of the epithelial cells lining the bronchi, and assisting in the forward movement of the secretion. But the main objection to this supposition will be found in the fact that not unfrequently cases of miliary tuberculosis are met with in which no cavity whatever can be discovered, though innumerable tubercles are disseminated throughout the whole organ.

There is another mode of explaining the transportation of bacteria from one tubercle to a distant part of the lung; it is the same as that used to explain the phenomenon of metastasis observed in certain morbid growths, that is, through the lymphatics. The fact that all tissues contain lymphatic channels or vessels, makes it appear very plausible that certain neoplastic cells might, in one way or the other, get into these channels to be carried by the lymph-current to other parts of the same, or even of another organ. Such an occurrence, it is true, may happen, but not as easily as is generally supposed.

The lymphatics commence, as we know, in the so-called lymph-spaces, representing minute, irregularly-shaped channels extending, especially through the connective tissues, where they are identical with the interspaces of the fibrillar bundles of this tissue and lined, though incompletely, by endothelial cells. In these channels the radicals of the lymphatic vessels commence. Each organ generally possesses a deep and a superficial set of lymphatic vessels. The radicals of the deep lymphatics, after having arisen from the lymph-channels, generally follow the minute bloodvessels, and, soon joining one another, form larger lymphatic vessels. By successively continued junctures of the

latter, the larger lymphatic vessels are formed, which, also following the bloodvessels, finally leave the organ to join the nearest lymphatic glands. But while the radicals of the deep lymphatics, after arising from the lymph-spaces, soon join one another, to give rise to larger lymphatic vessels, those of the superficial lymphatics first form a network which extends over the surface of the organ, and from which the lymphatic vessels subsequently arise. The lymphatic vessels, leaving the lymphatic glands, form larger vessels which finally join one or the other lymphatic duct. Some communications always exist between the deep and the superficial lymphatic vessels of an organ. All lymphatic vessels are provided with valves, which open in the direction of the lymph current, that is, toward the opening of the lymphatic ducts into the subclavian veins, or, in other words, toward the heart. Even the radicals of the lymphatic vessels possess these valves, the presence of which is indicated by a constriction in the wall of the vessel. Many years ago, I injected the lymphatics of the human liver with Prussian blue and even observed these constrictions on lymphatic vessels, smaller in diameter than the capillaries of the blood. From this we may presume, that the current of lymph can only run in one direction. In the lymphatic network on the surface of an organ the current may run sideways or backward into neighboring radicals, but only to a very small extent, as even here, its general direction is toward the lymphatic vessels arising from this network. The lymph-current, joining the blood-current in the subclavian veins, runs of course in the same direction with this, and is, therefore, controlled and kept in motion by the same power, upon which the circulation of the blood depends, that is, the suction-power of the heart. Hence we may presume that the lymph-current, from its very beginning in the lymph-spaces, cannot deviate from its

course, but is bound to take the most direct course toward the heart. For this reason we are justified to presume that, if ever bacteria tuberculosis are taken up by the radicals of the lymphatics of the lung, they will be carried by the lymph-current directly to the heart, and not to a distant terminal lobule of this organ, except through the medium of the circulation of the blood. Having once entered the blood, the bacteria might attach themselves to some of the colorless blood-corpuscles, and pass with these through the walls of the capillaries of one or the other organ, and thus give rise to the formation of new tubercles.

The formation of tubercles in this manner is not impossible, though quite improbable; for if this were the case, bacteria tuberculosis would much more frequently be met with in the blood of tuberculous patients than they have in reality been met with thus far. To the extent of my knowledge, there are only three authenticated cases, reported by Weichselbaum, in which these bacteria were found in the blood after death. In these cases cheesy tubercles were found in the uterine veins and Fallopian tubes, in the pulmonary artery, and around the pudendo-vesical plexus, where they had perforated a vein. In ten other cases Weigert has observed tubercles in the veins, and in two others tubercles in the thoracic duct; while tubercles in the latter locality had been previously observed in one case by Ponfick. In the reports of Weigert's and Ponfick's cases, however, nothing is said of the presence of bacteria tuberculosis in the blood, though, if they had really been present in this fluid, it would be obvious that they had entered it directly with the cheesy matter of the tubercles, and not by way of the lymphatics. Nor can the presence of tubercles in the walls of the veins be regarded as an unusual phenomenon, for they are equally met with in the walls of other vessels, or

in the peritoneum and other fibrous structures. I have myself stained the blood of several tuberculous patients by Ehrlich's and Gibbes' methods, but failed to discover any bacteria tuberculosis.

From what I have said above it will be seen, that the theory of the formation of tubercles in the human lungs from one, or several of the lining epithelial cells of the alveoli, previously irritated and crippled by bacteria tuberculosis, is rather resting upon a weak foundation, for if the tubercle was really originating in one or more of these cells, its formation could only be effected by a successive division and multiplication of the latter. In admitting, however, the possibility of the formation of the tubercle in this manner, we must likewise admit that a cell, the nucleus of which is undergoing a process of involution by the presence of bacteria in its protoplasm, is still capable of reproducing its kind. In this case the bacteria would be transmitted from cell to cell by the division of the mother-cells. But, even if this theory regarding the origin of the first tubercle were true, it would still fail to explain the simultaneous arising of hundreds, nay, in many cases, thousands of other tubercles, separated one from another by healthy parenchyma in the same lungs.

In the preceding section of this treatise I have shown that the bacteria tuberculosis first appear in the nuclei of the tubercle cells. Simultaneously, or even previously to the appearance of the bacteria in the nuclei, not only a gradual shriveling in the protoplasm of these bodies, but, in many instances, also a breaking up into several fragments is observed, the whole phenomenon indicating the going on of a process of involution. The same phenomenon is also observed, as I have already stated, in the nuclei of the cells of cancerous, or other neoplastic growth, while they are undergoing a certain kind of

degeneration; and, furthermore, in the nuclei of pus-cells and other leucocytes, as, for instance, the exudation cells of croupous pneumonia, or even in the nuclei of the epithelial cells of the bronchioles, met with in phthisical and pneumonic expectorations. In the nuclei of the tubercle cells this process of involution, manifesting itself by the shriveling and breaking up of the protoplasm of these bodies, is accompanied, as I have shown, by the appearance and development of bacteria tuberculosis.

Now the question may be asked: How is it possible for the tubercle to develop, if a tubercle-cell is rendered incapable of multiplying itself, as soon as bacteria appear within its nucleus? This apparent contradiction is easily explained in considering that the bacteria tuberculosis, even in incipient tubercles, do not appear in the nuclei of the younger tubercle-cells, but rather in those of the cells first formed. Besides, it is not in the nuclei of all the cells of a tubercle that bacteria will be met with; on the contrary, in every tubercle a considerable number of cells is observed, in which the nuclei present their normal form, and where no bacteria can be demonstrated, even after the most careful staining. I have already stated that the nearer the cells of a tubercle are to its cheesy centre, representing the part of the tubercle first formed, the more highly developed are the bacteria, and *vice versa*; though I must say that, now and then, I have observed bacteria in some of the nuclei of the lining cells of alveoli, adjacent to a tubercle, and apparently free from tuberculous growth. These cases, however, are exceptions to the rule. From these observations we may justly presume, that not all cells of the tubercle are in one and the same condition, but that, on the contrary, one part of them may be normal, while the rest is undergoing a process of involution or degeneration; it is in the nuclei of the latter that

the bacteria tuberculosis find the proper soil for their development.

In the preceding pages I have discussed some of the ways and manners in which the bacteria tuberculosis might gain access to the nuclei of the tubercle-cells, while showing at the same time the objections which render these suppositions implausible. But having thus far failed to offer an explanation more satisfactory than those already discussed, the reader would now be justified to ask for the *true* manner in which these bacteria originally get into the interior of these nuclei, where, according to my observations, they are developed. Often, during the course of my investigations, I have put this question to myself, but I must confess that hitherto I have completely failed to answer it satisfactorily, because every attempt to solve this problem leads the inquirer unconsciously to one or the other field of speculation. But, being more accustomed to deal with facts than with theories, or hypotheses, I shall further remain content with my ignorance on this part of the subject, until the facts, which I have observed, will be corroborated and properly explained by other investigators. This, however, will not prevent me from simply pointing out the manner in which alone the origin and development of bacteria in the nuclei of neoplastic cells could be *hypothetically* explained. This is as follows:

The observation of the bacteria appearing in the nuclei, before they are seen in the protoplasm of the cells, without being able to explain, on account of their incapacity of moving spontaneously, the exact manner in which they gained access to these bodies, naturally leads to the suggestion that they must have originated there. The observed fact, however, that these organisms are not present in the nuclei of all the cells of a tubercle, or of any other neoplasm, suggests furthermore, that

the condition of the protoplasm of the nuclei containing bacteria, must be different from that of those nuclei containing none; that this is really the case is proved by the difference observed in the morphological appearance of these nuclei, as I have sufficiently demonstrated before. Now, there are two hypotheses which might explain the origin of the bacteria in the substance of the nuclei. The one consists in supposing that certain germs, too minute to be detected by the microscope, are constantly present in the nuclei of the cells of the organism, to which they were carried by the nutritive fluid of the latter, the liquor sanguinis, and incorporated with the normal substances of nutrition contained in the fluid. These germs, then, remaining dormant during the normal condition of the cells and their nuclei, might be developed into bacteria as soon as degeneration of the latter takes place.

The second hypothesis is identical with H. CHARLTON BASTIAN'S theory of *heterogenesis*, according to which low organisms, such as bacteria, may be directly formed from the protoplasm of animal cells, the vital activity of which is on the wane, or, in other words, undergoing involution, as, for instance, is witnessed in the tubercle of tuberculosis. When Bastian advanced this theory, a number of years ago, it met, like his theory of "spontaneous generation," with a great opposition, because it did not correspond with the predominating idea, that such organisms must be the offspring of a parent of their own kind. For my own part I cannot blindly discard the theory of heterogenesis, for the reason, that it does not appear to me entirely impossible, that the normal arrangement of the molecules of the protoplasm of the nucleus of an animal cell might under certain conditions of the organism be altered in such a manner as to correspond with that of the molecules of vegetable protoplasm; nor is it proved that such a molecular

change in the protoplasm of an animal cell is altogether impossible. On the contrary, it will appear more probable in considering that a difference already exists in the molecular composition of the protoplasm of the nucleus and that of the body of the cell, manifesting itself by the difference in the reactions of certain agents on these protoplasms, as, for instance, acetic acid dissolving the protoplasm of the body of the cell, while it leaves the nucleus unaffected. Furthermore, in staining animal tissues containing bacteria, as sections of tubercle, with aniline colors by Ehrlich's method, this dissimilarity in the molecular composition of the protoplasm of the nuclei and that of the bodies of the cells is rendered very striking by the fact that, while the latter offers no resistance whatever to the decolorizing action of the acids, but readily parts with the color previously absorbed, the former resists to a certain degree, retaining mostly some of the color, though not as much as the bacteria. The resistance of these nuclei to the decolorizing action of the acids even increases, whenever their normal condition is altered. The phenomena just described certainly indicate a similarity of molecular composition existing in the protoplasm of the nuclei of animal cells and in that of the lowest vegetable organisms, such as the bacteria. And in considering this fact a little more closely, the idea,—that under certain conditions of the cell and its nucleus a certain process of involution is set up, by which the constituent particles of the nucleus might, according to Bastian, "individualize themselves" and grow into lower organisms,—will appear less absurd than it has hitherto been regarded. Besides, if it is possible, as we must presume, that at one time or another in the early history of our globe, higher organisms developed from lower ones, while the latter originally arose from a primitive formless protoplasm, then it may not be impossible that

the lowest organisms in nature, represented by the bacteria, might spontaneously arise from the still living protoplasm of the nucleus of an animal cell, which under certain unknown conditions had assumed the nature of vegetable protoplasm. Such a process, if even not probable, is at least possible. In the consideration of a question, like the one before us, however, we should always remember that, though modern science has deeply penetrated into the secrets of nature, many natural processes are still left hidden to us. To these belong the mutual relations of the molecules of animal and vegetable tissues, of which our knowledge is rather deficient, for the reason, that molecules cannot be seen, though it is essential that, in order to render the explanation of those phenomena generally manifested by matter more easy, they should hypothetically exist in our mind. The same is the case with Bastian's theory of "heterogenesis" which, at least in some instances, would satisfactorily explain, as I shall demonstrate directly, the action of certain specific and contagious poisons. To demonstrate this, however, a few remarks on the most important property of the bacterium tuberculosis, namely, that of giving rise to the tubercles of tuberculosis, will be necessary.

Although the question whether the bacterium tuberculosis is in reality the direct inciting cause of tuberculosis in man, is not definitely settled, Koch's discovery of tubercles being artificially produced in the lungs, or other organs of certain animals, by the introduction of this organism into the system of the latter, must at present be regarded as an established fact. The conclusion drawn from this fact is, of course, that the property of producing a specific disease like tuberculosis in the organs of these animals is inherent in the bacterium tuberculosis; though the process by which the pres-

ence of this organism gives rise to the formation of tubercles in the respective tissues, is still obscure. If the production of tubercles in these animals were confined to the inoculation of those bacteria contained in tuberculous matter, the phenomenon might be easily explained by presuming this matter, and not the bacteria, to represent the specific poison. But this is not alone the case, for tubercles will still be produced in these animals by inoculating them with very remote generations of those bacteria, obtained by successive artificial cultures of those originally contained in tuberculous matter. Now, as it thus far appears to be proved, that no other species of bacteria, nor any other substance is capable of producing tubercles in an animal, when introduced into its organism by inoculation, the only satisfactory explanation of the phenomenon appears to be by presuming that the bacterium tuberculosis must have acquired this special property of producing tubercles from the tuberculous matter itself, from which it drew its nourishment during its development; that is to say, that during the development of the organism, the constituent molecules of its protoplasm arranged themselves in a similar manner as those of the tuberculous matter, on which it lived, and that it thus acquired the properties of the latter, that is of producing tubercles; and furthermore, that these properties are during the artificial cultivation of the bacteria, transmitted from generation to generation.

According to Koch the tubercle bacteria are entirely dependent upon the human and animal organisms for their existence; or in other words, they are incapable of living or reproducing out side of the latter. With reference to this assertion we may ask: where then did they originally come

from, if not from the outside world? The most plausible answer for this question may be found in the theory of "heterogenesis," according to which these organisms would originate in the elements of the specifically diseased organ itself. But the bacteria being derived from the latter, it is but natural to presume that they were also endowed with the specific properties of the diseased matter of this organ, manifesting themselves in producing "*alike*," that is, in calling forth the same pathological conditions as were present in the tissues of the respective organ, from which they were derived. In the same way all other specific contagious diseases may be explained by the theory of "heterogenesis."

Although, as may be gathered from the above, I do not deny the contagiousness of tuberculosis in cases where the specific poison is directly transferred from one organism into another, as is done in all the inoculation experiments performed on animals, it nevertheless appears to me very improbable that the numerous cases of tuberculosis in man should have originated in this manner. On the contrary, it is very doubtful that such numbers of tubercle-bacteria, as would be required to produce all these cases, are contained in the atmosphere. Koch, of course, asserts that these bacteria are derived from the expectorations of tuberculous patients, which are left on the floors of rooms or corridors, or on the ground of the streets, and which after getting dry and pulverized by the shoes of people walking over them, are disseminated throughout the air. In examining this proposition a little more closely, it will be found that, notwithstanding the prevalence of tuberculosis, a very small fraction of all the tuberculous expectoration will have a

chance to reach the atmosphere in a pulverized state. In commencing our examination among the better situated classes of society, we will find that the tuberculous patients, for the sake of cleanliness, expectorate into spitboxes instead of upon the floor, and that with the cleaning of these articles of household furniture the expectorations will eventually arrive in the sewers of the street, or in some other channel of drainage. If the patient is confined to bed, he will generally be provided with some sort of a vessel, into which he may expectorate; and if he should even make use of a handkerchief, the expectoration will hardly be allowed to dry and to be pulverized, but rather be submitted to the action of the soap-water in the washtub. The same fate the tuberculous expectorations will meet with in hospitals, though in large public institutions of this kind it may happen, now and then, that a tuberculous patient soils the floors of a corridor with his expectoration, which, however, will hardly be left to dry and to be pulverized. Hence it would be only in the lowest strata of society, where cleanliness is unknown, that tuberculous sputa might reach the atmosphere in the form of powder. In all other cases the bacteria tuberculosis, instead of being disseminated throughout the atmosphere, will ultimately arrive in the gutters and sewers of the street, to be carried to the river or ocean, where they will be incapable of living or thriving, because their existence, according to Koch, solely depends upon the human or animal organism. The same will happen to the tuberculous expectorations left on the pavements of the streets, where they will be washed away by the rains of the season. We may, therefore, presume that, as I have remarked before, but a very small fraction of all the bacteria contained in the ex-

pectorations of tuberculous patients, will ever come to float in the atmosphere. But even this small fraction, which under favorable circumstances may come to be suspended in the atmosphere, will have but very narrow chances to reach the interior of the human lungs, for the reason that, being, as just mentioned, incapable of living or of increasing their numbers by reproduction outside of the human or animal organism, they will soon be dispersed and swept away to unknown regions by the winds, or removed from the atmosphere by every rain, and like their brethren, finally arrive in the various channels of drainage.

I might still further enlarge upon this subject, but I trust that the foregoing remarks will suffice to show that the numerous cases of tuberculosis cannot be regarded as having been caused by bacteria tuberculosis floating in the atmosphere. In those rare cases in which the disease has in reality been communicated from one individual to another, it was undoubtedly accomplished by the medium of the expectoration itself, which in the form of spray—as may happen during the act of coughing or speaking or even kissing—issues from the mouth of the tuberculous individual to be inhaled by the lungs of another person. Besides the immunity from tuberculosis, generally exhibited by the resident physicians and nurses of hospitals, is another proof to show that this disease is but rarely communicated by the sole medium of the atmosphere; as an instance of this fact I simply point, as has been done by other authors before me, to the well known statistics of the “Hospital for Consumption,” at Brompton, in England.

Notwithstanding the popularity which Koch’s theory of the bacterium tuberculosis being the direct and sole cause of

tuberculosis, soon acquired after the discovery of this organism, and to a certain extent still holds, it cannot be denied that since that time, so far as may be gathered from the current medical literature, the number of those physicians who doubt the correctness of this theory, has been steadily increasing. Thus some of the most distinguished clinicians, being unable to indorse the whole original theory, have altered it in order to render it harmonious with their own practical experience, and with the old-established fact that tuberculosis is hereditary in its nature, depending upon a special diathesis which is transmitted from the parent to the offspring. Accordingly, Koch's original theory, teaching that the bacterium tuberculosis was capable of producing tuberculosis without regard to predisposition in every individual, has been modified in such a manner as to read now: *Bacterium tuberculosis produces tuberculosis when associated with tubercular diathesis, but is harmless in the absence of the latter; and vice versa, tubercular diathesis leads to tuberculosis if associated with bacterium tuberculosis, but is harmless without this organism.*

Presuming that the reader is familiar with the numerous articles, published in various medical journals, and of which the authors either advocate this theory, or even regard the bacterium tuberculosis as a product of the disease itself, I forbear to enlarge furthermore upon this subject; though I may say that the modification of Koch's original theory rather appears to me as a loss of faith in the capacity of this organism of causing the formation of tubercles. But, notwithstanding the doubts which still exist in regard to this capacity of the tubercle-bacterium, its presence in the tissues of the human lungs, or other organs, must be regarded as pathogno-

monic of the disease ; though cases of tuberculosis are met with in which none of these bacteria are detected in the sputum of the patient, for the reason, that no cheesy centers, containing liberated bacteria tuberculosis, have as yet been formed.

In the foregoing treatise on the relations of the bacterium tuberculosis to the human lungs, or other organs, I have presented the subject to the reader in the light in which it has appeared to me, and, as much as possible, without any prejudice against one or the other theory concerned therein. As far as I know, I have, though unjustly, been regarded as an opponent to the theory of "living germs of disease," because I failed, as in the case of yellow fever, to detect living organisms, to which any signification concerning the cause of the disease might have been attached, in the tissues of the organs which I examined. On the contrary, I have always believed in the possibility of minute living organisms being capable of producing disease by their presence in the blood and tissues, though, in some instances, including tuberculosis, I have doubted the probability of this being the case, for the reason, that the facts, upon which the theory was based, were insufficient to explain all the phenomena manifested by the respective diseases. In those cases, however, where the observed facts covered, or explained all these phenomena, I have never hesitated to acknowledge the facts presented. But, I am unable to enthusiastically receive any new theory, founded upon one or the other observation, on mere faith, though it might be in accord with the already prevailing ideas of the day. Not being naturally inclined to enthusiasm—a passion nearly allied to fanaticism—I prefer in such cases to coolly reflect upon every detail of the subject, and, if possible, to examine it myself, before forming a definite opinion. Every new theory

should be received with caution, and not be accepted as true, before it has been thoroughly examined in all its aspects. For nearly thirty years, I have myself been engaged in original studies, but I must confess that, knowing how much every investigator is inclined to interpret some of his observations so as to correspond with one or another favorite idea, I frequently hesitate to draw conclusions from any observation, before I have thoroughly examined and considered the subject in all its aspects. During the progress of science, many theories have been formed, and subsequently abandoned upon the discovery of new and more substantial facts, that explained phenomena which the old theory failed to do. It is, therefore, not impossible, that the same may happen to the now prevailing germ-theory, and that thus the whole problem of the "germs of disease" may be solved in some at present unknown way.

EXPLANATION OF THE ILLUSTRATIONS.

Fig. 1.—Bacteria tuberculosis in tuberculous expectoration; *a*, deeply stained; *b*, feebly stained. Magnified 1090 diameters.

Fig. 2.—Bacteria met with in urine, the description of which will be found in the text.—Magnified 1,090 diameters.

Fig. 3.—Represents a small part of the periphery of a miliary tubercle with several of the neighboring non-tuberculous alveoli; *a*, shriveled nuclei containing more or less bacteria tuberculosis; *b*, epithelial cells of the non-tuberculous alveoli; *c*, inter-alveolar septa with the nuclei of their multiplied connective-tissue cells, derived from the adventitia of their vessels, etc.; *d*, small portion of the periphery of the tubercle; *e*, young tubercle, arisen from the wall of a large alveolus, or perhaps infundibular cavity, and, contrary to the

rule generally observed, has undergone the coagulation necrosis.—Magnified 625 diameters.

Fig. 4.—Represents a portion of a miliary tubercle near its cheesy centre; *a*, bacteria tuberculosis, developing in the nuclei of the tubercle cells; the outlines of the cells are not seen, on account of the object being mounted in Canada balsam and very highly illuminated; *b*, the same nuclei out of focus; *c*, inter-alveolar septa; *d*, portion of the cheesy centre of the tubercle.—Magnified about 1,090 diameters.

Fig. 5.—Represents a small portion from a large tubercle from the lungs of a boy, sixteen years old, and affected with miliary tuberculosis of the lungs, liver, spleen, kidneys, and lymphatic glands; *a*, bacteria tuberculosis, developed in the nuclei of the tubercle cells; *b*, the same out of focus; *c*, degenerated interstitial connective tissues, leading the central part of the tubercle; *d*, groups of bacteria, commencing to enlarge in their dimensions; *e*, aggregations of bacteria tuberculosis.—Magnified about 1,090 diameters.

Fig. 6.—Bacteria tuberculosis, contained in the nuclei of the muscular and of the connective-tissue cells in the wall of a bronchioles; *a*, nuclei of the connective-tissue cells; *b*, nuclei of the muscular-tissue cells.—Magnified about 1,090 diameters.

Fig. 7.—Bacteria tuberculosis contained in the nuclei of the cells of indurated tuberculous tissue.—Magnified about 1,090 diameters.

Fig. 8.—Represents a small portion of the parenchyma of the liver, bordering directly the periphery of a miliary tubercle; *a*, nuclei of hepatic cells, still presenting a normal appearance; *b*, nuclei with bacteria developing in their interior.—Magnified 625 diameters.

Fig. 9.—Represents a portion of the centre of a miliary

tubercle of the liver, having undergone coagulation-necrosis ; *a*, fissures, very likely representing the lumen of contracted capillaries ; *b*, groups of bacteria tuberculosis with the remains of the protoplasm of the nuclei, in which they were developed ; *c*, aggregations of these bacteria.—Magnified 625 diameters.

Fig. 10.—Represents some of the anatomical elements of a miliary tubercle of the liver ; *a*, group of normal hepatic cells from near the border of the tubercle ; *b*, a pair of hepatic cells from the periphery of the tubercle, the nuclei of which have commenced to shrivel ; *c*, a number of nuclei from the cheesy centre of the tubercle, the margins of which are shriveled in a higher degree and broken up into fragments ; *d*, ultimate minute fragments of nuclei, some of which have assumed the form of granular filaments.—Magnified about 1,090 diameters. *

Fig. 11.—Represents a small portion of a leprous liver ; *a*, normal nuclei of hepatic cells ; *b*, degenerating nuclei with shriveled margins ; *c*, bacteria lepræ, developing in the nuclei of hepatic cells ; *d*, bacteria lepræ, liberated by the degeneration of the protoplasm of the nucleus, and disseminating throughout the likewise degenerated protoplasm of the body of the cell.—Magnified 625 diameters.

Fig. 12.—Bacteria lepræ, as met with in the blood of some lepers.—Magnified about 1,090 diameters.

Fig. 13.—Represents a minute portion of the pars reticularis of the corium of the skin from the margin of a leprous tubercle ; *a*, nuclei of connective-tissue cells containing bacteria lepræ in their early stage of development ; *b*, neoplastic connective-tissue cells in an advanced stage of fatty degeneration, containing fully developed bacteria lepræ between the fat-globules.—Magnified 625 diameters.

Fig. 14.—Represents a minute portion from the middle of the same leprous tubercle, in which the bacteria lepræ are seen in their different stages of development; *a*, bacteria in the nuclei of the unchanged connective-tissue cells; *b*, bacteria slightly more developed; *c*, the nucleus has disappeared by degeneration and the bacteria lepræ are seen fully developed in the protoplasm of the cell, exhibiting their granular nature; *d*, fully developed bacteria lepræ between the fat-globules of the degenerated cell.—Magnified 625 diameters.

Fig. 15.—A number of degenerated leprous cells higher magnified, showing to a better advantage the morphological character of the bacteria lepræ.—Magnified about 1,090 diameters.

HYDROPHOBIA AND IMAGINATION. By W. H. FORWOOD, M. D.,
Major and Surgeon, U. S. Army.

On a beautiful moonlight evening, September 10th, 1868, the military post of Fort Larned, Kansas, was suddenly invaded by a mad wolf. The post was situated in those days in the midst of a vast rolling prairie far from any human habitation, save the encampments of roving Indian tribes, and on the plains in all directions were great bands of buffalo, wolves and other wild animals.

The night was clear and warm, and about 10 o'clock the patients in the ward of the little one-story adobe hospital were startled by the entrance of a large gray wolf. Corporal McGillicuddy, 3d Infantry, in hospital for sore eyes, rose up in bed, thinking to scare the animal off, but he was instantly attacked and severely bitten in the left hand and right arm, when the wolf rushed out through the open door and disappeared as suddenly as he came.

A moment later he was at a tent near by where two women were sleeping, and tore a large hole in the side of the canvas, leaving the marks of his teeth on the bed rail, without doing further damage.

His next appearance was at my own quarters, where he ascended the porch, bounded through the open window, tearing a large piece out of the curtain, sprang over the lounge on which I was lying at the time, and encountered my large Newfoundland dog "Prince," in the middle of the room. The conflict that ensued was short and sharp; a furious rush, a few vicious snaps of his powerful jaws, and the wolf was off through the hall and out at the back door, apparently satisfied with the mischief he had done without any desire to fight the battle to a finish. His course from this point was a bee line across an open space of about 100 yards to the house of the Indian agent, where a number of persons were assembled, enjoying the beautiful evening on the veranda.

Lieutenant Thompson, 3d Infantry, was seated on the steps and saw the wolf approach. He came at a run, and without hesitating seized the officer, first by one leg and then the other, inflicting quickly several severe bites, and was gone in a moment at the same rapid pace in the direction of the cavalry stables.

On a cot in the open air in front of the stables, Private Mason, of the 10th Cavalry, was lying with his shoes and stockings off, awaiting his turn to go on post as one of the guard. The wolf seized him by the bare foot and drove his enormous canine tooth entirely through between the metatarsal bones from the instep to the sole.

The sentinel walking post across the way had not sufficient time to bring his gun to bear before the infuriated animal was upon him, and fired over its back as it plunged headlong be-

tween his legs, throwing him to the ground, and disappeared toward the hay stacks, leaving no more serious damage than an ugly rent in the leg of the soldier's pantaloons.

The guard at the hay stacks saw the wolf coming in time and making a lucky shot sent a bullet through his chest into the spinal column, killing him instantly. He was a large male specimen of his kind, very numerous at that time on the surrounding prairies. His mouth was covered with a frothy saliva, tinged with blood, traces of which he had left on every object touched in his entire round of the post. Indians relate similar instances of mad wolves entering their camps, and say they always remain and continue their depredations as this one did until killed.

The wounds of the three men bitten were promptly examined and all thoroughly washed in warm water and cauterized with the nitrate of silver. Lieutenant Thompson had numerous scars on both legs from the ankles to the knees, inflicted *through the ordinary clothing*. Private Mason's foot bled freely and was soaked for some time in several changes of water and then cauterized as deeply as possible from both openings of the wounds. Corporal McGillicuddy had the flesh stripped from his left little finger, leaving the bone almost bare. In the right arm the bites were deep, and except near the wrist were made through the covering of his cotton night shirt. I urged the immediate amputation of his finger at the metacarpo-phalangeal articulation, but he positively refused to give his consent. I suggested hydrophobia, but he laughed at the idea, saying wolves never went mad, and that there was no danger. It was not until the second or third day after the accident that he would consent to the amputation, when ether was given and the operation done. No attempt was made to

treat the wounds of the dog, as his heavy coat of shaggy hair made it difficult to find them.

All the wounds, including the amputation, healed quickly and kindly. Lieutenant Thompson and Private Mason remained free from any unpleasant symptoms and are still living, although left to their own reflections, as they were for many months in that dreary and monotonous place, far from home and friends and fully cognizant of the fate that befell the dog and the other man, and told many stories by the Indians of the fatal effects of such accidents, they could not have been entirely free from anxiety.

Poor old Prince remained well and happy as usual until about the tenth day, when for the first time in years he showed signs of serious illness. He was dull, mopy, did not care to go out and refused all food or drink. When water was placed before him he appeared to want it, but would make no effort to swallow. He was securely chained in a comfortable shady place on the grass and carefully attended, but did not improve. On the afternoon of the second day he seemed very nervous, restless and unnatural in disposition and still refused to eat or drink. At this stage of the case an officer whose anxiety for the safety of his children was too great to tolerate any further experiments with a mad dog in the vicinity of his quarters, put an end to all further observation by shooting him through the head; but there was no doubt left in my mind as to the nature of the disease.

McGillicuddy was an old soldier, and I managed to keep him pottering about the hospital on the pretext of a slight granulation of the lids. He was otherwise perfectly well and cheerful, and showed no trace of fear or anxiety concerning his wounds. He knew that Thompson and Mason were well and on duty, and the fate of Prince was carefully kept from

him. He had been on the frontier for many years and scouted the idea of a mad wolf as something too absurd to mention.

On the morning of the thirty-first day after the accident, in making my rounds of the ward I found the corporal lying on his bed. He did not get up and stand "at attention" as was his pride and custom, answered my questions in monosyllables, and was evidently out of sorts. At nine o'clock that evening the steward sent word that McGillicuddy was acting strangely and seemed quite ill. He was nervous, restless, cross, and wore an anxious expression. He complained of a smothering or choking sensation about the chest and throat, which he attributed to the *ether* administered when his finger was amputated, and scolded me roundly for having made him take it. I noticed every now and then a peculiar spasmodic action of the diaphragm—a succession of two or three quick, short, jerking movements—giving rise to a sort of sob or sigh, such as may be noticed in young children at the end of a long fit of crying. This occurred once in two or three minutes when quiet or oftener when disturbed and was quite characteristic. Some little simple sedative mixture was prepared and offered him in a glass, but he discovered to his surprise that he could not take it, nor even think of doing so without great distress. After a little persuasion he took the glass, holding it as far from him as possible, and in great agitation he assured me he could not swallow. Finally, after several attempts, he succeeded in bringing the glass with a trembling hand almost to his lips, then throwing it violently from him fell back in convulsive excitement, sighing rapidly and deeply as above described. From this time the man never swallowed a particle of anything until just before the close, when the attendants thought they had succeeded in getting a few drops of water down his throat from a teaspoon. This abstinence was not

from any obstinacy on the part of the patient, but because swallowing was impossible and the attempt distressed and excited him more than almost anything else.

The spasmodic disturbance beginning in the muscles of the diaphragm and throat extended in the next twenty-four hours to the chest, back and extremities, and the nervous sensitiveness increased until it became extreme. The least disturbance, the slightest noise, the gentlest touch sufficed to bring on spasmodic excitement. So far as the muscular system was concerned these convulsive attacks bore a striking resemblance to those caused by poisonous doses of strychnine. Every fibre of the muscles seemed powerfully contracted for a time, then slowly relaxed, and the patient, whose mind remained clear throughout, would beg those about him to keep still and make no noise, that the intervals of comparative rest might be a little longer. The effort to talk distressed him, and he therefore spoke as little as possible, sometimes complaining of thirst and a burning sensation in the throat and mouth and of the frightful pains that accompanied his attacks. Death closed the scene at the end of seventy hours after the first noticeable symptoms appeared. Not the slightest sign of fear was exhibited at any time, and almost the last word the patient uttered was a complaint against the doctor for giving him ether, which he believed to be the main cause of his illness.

Much has been written of late by prominent men in the medical profession tending to show that true rabies in man is a myth, the so-called cases of *hydrophobia* being merely the result of fear and imagination. It seems to me that a sufficient refutation of this theory is the fact that rabies is communicated, through the bite, from one animal of the canine species to another, and from these to beasts of other species, as horses, cows, pigs, sheep, etc. It will hardly be claimed that fear or

imagination plays any important part in determining the result in such cases as these, which are numerous and well authenticated; and if thus communicable to the lower animals, why not to man also? It is certain that the disease originating in dogs and wolves and characterized by the definite and well recognized symptoms long known under the name of hydrophobia is no myth but a painful and invariably fatal reality. Precisely the same symptoms are transmissible from one dog to another through the bite, and similar symptoms to other animals, each according to its species. Those produced in man are characteristic and distinguishable from all other known diseases. In order to a clear understanding of the matter it is necessary to bear in mind the following important points:

1st. Rabies in the canine species, though probably liable to epidemic outbreaks, is quite rare, but many other diseases of dogs have been mistaken for it, thus giving rise to numerous spurious cases and much unnecessary alarm.

2nd. The bite of a rapid dog does not always, nor even in a majority of cases, infect the animal bitten, just as vaccination does not always "take" in children, although the virus may be good. It may not be introduced into the blood or may be washed off before it has been absorbed, or possibly the system may be from some unknown cause protected against its effects. Of a given number of animals bitten all remain well for a longer or shorter period, and then a small proportion sicken and die and the rest show no ill effects other than those resulting from the slight wounds inflicted, which are no more serious than if made by a healthy dog. But, once the symptoms of hydrophobia appear, death is inevitable. There is no middle ground. Recovery, so far as any well authenticated instance to the contrary is concerned, is *prima facie* evidence of non-infection and erroneous diagnosis. PREVENTION by means of

washing, cauterization, etc., of the wounds is the only effectual treatment.

Imagination plays an important rôle in medical pathology and fear is a serious complication in many diseases, and it is to be expected that among intelligent beings, fully conscious of all the horrible consequences liable to follow the bite of a rabid animal, there should be more or less nervous disturbance and mental agony which in certain persons may lead to serious or even fatal results; but this will not hold good in the case of babies, idiots, insane persons or any of the lower animals, quite as liable to hydrophobia as the most imaginative men or women in the full possession of their mental faculties. *

505 La Salle Avenue.

INTUBATION OF THE LARYNX AS A SUBSTITUTE FOR TRACHEOTOMY IN THE TREATMENT OF PSEUDO-MEMBRANOUS LARYNGITIS; WITH A REPORT OF EIGHTY-THREE CASES. *By F. E. WAXHAM, M. D., Professor of Diseases of Children, College of Physicians and Surgeons, Chicago.*

[Read before the Chicago Medical Society.]

A little over one year ago it was my privilege to present to this SOCIETY Dr. O'Dwyer's instruments for intubation, and to illustrate the operation upon the cadaver. The instruments were then imperfect, and a few trials and accidents proved the necessity for various modifications. First, the tubes were plain, with no shoulders, and they were too frequently rejected while coughing or vomiting. There was nothing to keep them in position but their length and weight.

Again, the heads of the tubes were too small, and after losing one in the trachea we were thoroughly convinced of the necessity for a change. The first important modification con-

sisted in the addition of a shoulder to make them self-retaining. This shoulder consisted of a slight swelling or enlargement at the centre of the tube. Still they were not self-retaining, being frequently rejected by strong and vigorous children. The diameter was still further increased, and although they will now occasionally be rejected, yet they are as large as is consistent with safety. Another modification consisted in the enlargement of the head of the tube to prevent its falling into the trachea. A third, and, I believe, a very important modification,* has been the construction of the tubes with thinner walls, so that they are lighter and the calibre larger, giving greater breathing space and a better opportunity for the expulsion of false membrane. These tubes, which I now have the honor of presenting to you, will illustrate the various changes that have been made. In addition to these tubes for children I wish to present an adult tube which Dr. O'Dwyer has very kindly sent me. You will notice the great size and weight of this tube.†

The first extractor, and the one presented to you a year ago, consisted of an instrument with two jaws, opened and closed by a spring, one of the jaws entering the tube and the other passing outside. By pushing on the spring the tube is grasped between them.

Dr. O'Dwyer has had an extractor constructed on a somewhat different principle. The jaws while closed are passed into the tube and by pressing on the spring they are separated, thus holding the tube while it is extracted. This extractor has been very kindly furnished me by Hugo Keller, of New York.

* Made by Sharp and Smith, of Chicago.

† Which would seem objectionable, but which Dr. O'Dwyer claims to be an advantage, as it prevents expulsion.

No change has been made in the introducing instrument or the method of placing the tube.

A few words, however, in regard to the manner of introducing the tube may not be out of place. The operation has been so frequently described that it is unnecessary to go into details. I wish simply to refer to the relation of the index finger and the end of the tube while it is being introduced; a practical point which will be of great service to the inexperienced. There are two methods of placing the tube: we may introduce the index finger of the left hand until we feel the aperture of the larynx and then guide the tube into it; or we may simply reach the epiglottis, passing the end of the tube gently over it and then making an abrupt turn, when the tube, if in the median line, will slip into the larynx. The practical point is this: when the index finger has been introduced, the end of the tube, in either case, should be passed under the finger, not over it or by the side of it, but directly under it. In extracting the tube, the finger should be introduced over the epiglottis until it reaches the top of the tube; we then feel for the opening of the tube, and the extractor is introduced under the finger in exactly the same manner.

I would here *insist* upon the importance of practice upon the cadaver before attempting the operation upon the living child. While the expert will occupy scarcely five seconds in placing the tube, and with very little irritation and no injury, yet the inexperienced will often completely fail, causing the little patient great distress, the friends agony, and the physician great embarrassment. Indeed repeated and unsuccessful attempts upon the frightened, struggling, suffocating child are nothing short of cruelty. On two occasions it has been my misfortune to witness unfavorable terminations of apparently hopeful cases from detachment of large masses of membrane

below the tube. As our failures are oftentimes more instructive to us than our successes a history of one of these cases may not be uninteresting.

On March 8th I was called to see a boy, eight years old, in the last agonies of suffocation from diphtheritic laryngitis. Intubation was quickly performed and with prompt and entire relief to the distressing symptoms.

	4:30 P. M.,	pulse, 130—temp., 101—respiration, 24.
	9:00 “ “	112— “ 102— “ 24.
March 9th,	9:00 A. M., “	120— “ 102— “ 20.
	5:00 P. M., “	112— “ 103— “ 24.
	9:00 “ “	110— “ 101— “ 24.
“ 10th,	9:00 A. M., “	112— “ 101— “ 24.

The patient seemed bright and perfectly comfortable, and took an abundance of nourishment without difficulty. There was every indication of a favorable termination. At about 4 o'clock, March 10th, a little over two days after the operation was performed, he had a “choking spell,” but before my arrival he had succeeded in expelling a piece of membrane and was perfectly easy. Careful auscultation, however, revealed a bronchial complication. A mustard poultice was applied to the chest, followed by flaxseed poultices, and an expectorant mixture given. Fearing another attack of suffocation from detachment of membrane below the tube, I hastened home to make arrangements for remaining with the child all night. Hardly had I reached home before I was again summoned in the greatest of haste, the messenger stating that the boy was “choking to death.” Upon arriving a few moments later I found the message too true, and upon entering the room the father exclaimed, “Oh, Doctor! you are too late, he is dead.” Respiration had ceased and he was blue and pulseless. Never-

theless artificial respiration was resorted to and in a few moments he was resuscitated, although the respiration was labored and imperfect. The tube was at once extracted; during the operation the child passing into a convulsion. Chloroform was given to control the convulsion and help was summoned. In response to my urgent request for aid Drs. McWilliams and Sherry kindly came to my assistance. The child was placed upon the table, the trachea opened and a mass of membrane several inches in length removed. The patient revived, took nourishment well and seemed comfortable. There was, however, a rapid extension of the membranous exudate and the child died within twenty-four hours from bronchial obstruction. Another case terminated fatally in much the same manner, from peeling up of membrane directly after the removal of the tube.

This indeed is a danger that may be justly dreaded. In order to overcome it I have devised a tracheal forceps with which we may enter the trachea, by the way of the mouth, and remove the mass of membrane causing the obstruction.

There is one other source of danger. Occasionally a child will utterly refuse to take nourishment, and rectal enemas fail to support the patient sufficiently. To obviate this danger, I have had constructed a feeding-flask, consisting of a nursing bottle with a tube extending from it to the bulb of a Davidson syringe; this in turn is connected with an œsophageal tube. The tube is introduced into the œsophagus, and by pressing upon the bulb the contents of the bottle may be quickly transferred to the stomach. †

In considering whether we have a substitute for tracheot-

* Made by Sharp & Smith. † Made by E. H. Sargent & Co.

omy in tubage of the larynx, the first and most important question that will arise will be in regard to the comparative success of the two methods. Our text-books generally give one out of three as the average proportion of recoveries from tracheotomy, but that this percentage is too high, few I am sure will deny. It must be remembered that these results are obtained from reports of a few of our most successful tracheotomists. The thousand physicians who have met with inferior success never publish their cases and are never heard from excepting when they raise their voices against early operations. I have, myself, met with discouraging results with tracheotomy, notwithstanding that every patient had the most watchful care and attention, I know of one physician, not of this city, however, who has performed tracheotomy fifty times with but two recoveries, and another, noted for his skill as a surgeon, who has operated twenty times without saving a single patient, and another who has operated fourteen times without success, and another eight times without a recovery, and still another fifteen times with but one recovery, making one hundred and seven cases with but three recoveries.

I know of one of our eminent surgeons who delegates the operation to others when called upon to perform it on account of his loss of confidence in the procedure. Knowing these facts too well, I have often wondered why our text-books should have placed so high a value upon tracheotomy, and indeed have sometimes questioned whether the operation is justifiable.

In order to obtain the true status of tracheotomy in Chicago I have by personal inquiry, and by postal card, col-

I was 2 yrs. and 2 mo.	9 were 2 yrs.
I " 7 mo.	2 " 2 " and 4 mo.
I " 13 "	4 " 2½ "
I " 12 "	19 " 3 "
I " 20 "	7 " 3½ "
I " 2 yrs. and 5 mo.	14 " 4 "
I " 2 " " 3 "	16 " 5 "
I " 3 " " 3 "	3 " 5½ "
I " 4½ "	16 " 6 "
I " 5 " and 7 mo.	6 " 7 "
I " 6½ "	8 " 8 "
I " 7½ "	5 " 9 "
I " 19 "	4 " 10 "
I " 24 "	2 " 12 "
6 were 18 mo.	3 " 13 "

This gives an average of 5 years and 1 month. Where the cause of death has been referred to, extension of the membrane into the bronchial tubes has been given most frequently.

In contrast to these statistics it is my pleasure to report 83 cases of intubation with 23 recoveries, or 27.71 per centum. Three of these cases were reported to me by Dr. C. P. Caldwell, five by Dr. Ingals, seven by Dr. Strong, ten by Dr. Richardson, and fifty-eight were under my own care. The ages were as follows :

No. of cases.	Age.	Recoveries.	No. of cases.	Age.	Recoveries.
1	9 mo.	0	12	3 yrs.	2
1	11 "	0	1	3 " and 4 mo.	1
1	13 "	0	1	3 " " 6 "	0
3	14 "	1	11	4 "	5
1	15 "	0	1	4 " " 9 "	1
1	16 "	0	3	4½ "	0
1	17 "	0	9	5 "	4
1	18 "	1	6	7 "	1
1	20 "	1	1	7½ "	0
7	2 yrs.	2	2	8 "	1
2	2 " and 1 mo.	1	1	11 "	0
2	2 " " 2 "	1	7	—	0
2	2 " " 3 "	0			
3	2 " " 6 "	1			
1	2 " " 9 "	0			
			83		23

Average age, 3 years and 7 months.

It will be observed that 11 cases with 3 recoveries were under 2 years of age, 28 with 8 recoveries were under 3 years, 14 cases with 3 recoveries between 3 and 4 years, 15 cases with 6 recoveries between 4 and 5, 9 cases between 5 and 6 with 4 recoveries and 10 cases with 2 recoveries between 7 and 11 years.

It will also be observed that while the percentage of recoveries from tracheotomy in the 306 cases reported has been 18.95, that from intubation has been 27.71. This, too, represents, not simply recoveries from the operation but entire recoveries from the disease which rendered the operation necessary.

Of the 58 cases coming under my care, 20 were actually moribund when the operation was performed, many of them entirely unconscious, and 40 were bad cases of diphtheria, characterized by severe constitutional symptoms and extensive exudation in the pharynx as well as in the larynx. In 18 cases the exudation in the pharynx was slight, but in every case, without exception, false membrane was expelled, either in the form of muco-pus, shreds or casts. In every case the operation was performed to prevent impending suffocation and the cases pronounced hopeless without surgical interference. In addition to the recoveries cited above, the operation was perfectly successful in 18 others, although the patients died. Thus 4 died perfectly easy, before the removal of the tube, from the severity of the diphtheritic disease; 3 died easily from one to several days after the removal of the tube, from exhaustion incident to the disease; 1 died from paralysis of the heart; 1 from uræmic convulsions; 3 from pneumonia, resulting from hypostatic congestion, and 6 from pneumonia, resulting from unfavorable surroundings. These cases added to those where entire recovery occurred and the result 41, or 49.39 per centum represents the proportion of cases in which the operation was

successful and entirely satisfactory; the remaining cases dying generally from extension of the membrane into the bronchi.

Many of these cases were delegated to me because they were considered too young or too unfavorable for tracheotomy. Many of them were young, nursing infants; and although the operation can rarely succeed, yet the fact that we have been able to save one child but fourteen months old and another of twenty months should be an encouragement always to perform the operation, when indicated, without regard to age. One of these cases was so truly remarkable that a brief history may prove instructive.

May 5th I was called to perform intubation upon a nursing infant of fourteen months, a patient of Dr. Lawless. The infant had just recovered from measles when taken with diphtheria. The pharyngeal deposit was slight, but quickly extended into the larynx. Prof. Steele, who assisted in the operation, expressed the opinion that the infant could live but a few hours without an operation. Intubation was quickly performed, and with instant relief to the urgent symptoms.

Considerable mucus and softened membrane were expelled, and the little patient at once passed into a quiet sleep. Milk was drawn from the breast and given the infant from a spoon for the first two days, after which time it was able to nurse. For two days the little patient did remarkably well, appearing bright and strong and coughing with considerable force.

With the assistance of Drs. Lawless and Clendenning the tube was removed after being in position for two days, but it was necessary to at once reintroduce it. On the third day the strength began to fail, and the patient seemed to be doing poorly. Mucus and softened membrane would collect in the tube and the infant had not sufficient strength to expel it. At

the expiration of the third day the tube was removed, thoroughly cleansed and reintroduced. The infant was in a bad condition, and little hope of recovery was entertained. At about 2 A. M., May 9th, I was called to see the little patient again, and found that it had been having convulsions. The breathing was embarrassed and rapid, and evidently indicated obstruction of the tube. The tube was again removed, after having been in position three and a half days. The respiration, although very rapid, numbering 70 per minute, was comparatively easy, and the tube was not reintroduced. Warm flaxseed poultices were applied to the chest, and the next morning there was marked improvement. Convalescence proceeded slowly but surely, and in a few days the little patient was entirely out of danger and made a perfect recovery.

Many of these cases have been moribund, pulseless, limp, and unconscious when the operation was performed. The history of a single case will illustrate the unfavorable condition of many of these cases.

May 6th I was called by Dr. Clendenning to perform intubation upon a child three years old. Upon arriving we found the child dying. It was blue, cold, pulseless and unconscious. An occasional gasp was the only sign of life. A tube was quickly introduced, not even producing gagging or coughing. Artificial respiration was performed, the child thoroughly rubbed, and after working vigorously for half an hour we were gratified to see the child open its eyes and look about. A few teaspoonfuls of brandy now excited coughing and we soon had the throat free from mucus and softened membrane. The child took nourishment well, the pulse returned, the warmth returned to the surface and the little patient was left sleeping quietly and comfortably. The

next day the child was bright and happy, breathing easily, and no one would have imagined that there was a tube two inches in length in its throat, or that the day before it was at death's door. The patient did remarkably well for three days, giving every promise of recovery. The membrane, however, gradually extended into the bronchi, and the child died four days after the operation was performed. Although the prognosis is far more unfavorable where the patient is moribund, yet that they may be perfectly resuscitated I have proved over and over again, and it has been my pleasure to save one patient in such a desperate condition when the operation was performed. In conclusion I would say, that intubation possesses many advantages over tracheotomy. The ease and rapidity with which the operation can be performed, the perfect comfort of the patient and the rapid convalescence after the removal of the tube are in great contrast to tracheotomy. In addition to this, intubation is more successful. While the record of recoveries after tracheotomy in Chicago has been 18.95 per cent, that of intubation has been 27.71. Again, one of our most successful tracheotomists in Chicago has performed tracheotomy 33 times with 9 recoveries in a period of twenty years. That I have performed intubation more times and saved more lives in a single season is still further evidence of the superiority of the new operation over tracheotomy.

In closing this paper I would take occasion to thank the members of the profession of this city for the many courtesies extended to me. To the following gentlemen I am particularly indebted and would refer to them as to the accuracy of this report: Dr. Steele, Dr. Sullivan, Dr. Hatfield, Dr. Casselberry, Dr. Starkey, Dr. Behrend, Dr. H. T. Byford,

Dr. Richardson, Dr. Dahlberg, Dr. Appleby, Dr. Helm, Dr. Bosworth, Dr. Nelson, Dr. Kosakowski, Dr. Valin, Dr. Chas. E. Caldwell, Dr. Ogden, Dr. Holroyd, Dr. Pierpoint, of Englewood, Dr. Quine, Dr. Miller, of Kensington, Dr. Willard, Dr. C. P. Caldwell, Dr. Dyas, Dr. Berry, Dr. McGinnis, of Brighton, Dr. Hoadley, Dr. Nutt, of Marengo, Dr. Rea, Dr. Hempstead, Dr. Clark, of Rockford, Dr. Hall, Dr. Van Doozer, Dr. McWilliams, Dr. Parsons, Dr. Fenger, Dr. Storck, Dr. Lawless, Dr. Tillosten, Dr. Clendening, Dr. Collins, Dr. Crane, Dr. H. A. Johnson, Dr. Manheimer, Dr. Webb, Dr. Able, Dr. Simons, Dr. McDonald, Dr. Hollister, Dr. Goodall, Dr. R. G. Bogue, Dr. Shepherd, Dr. E. F. Ingals, Dr. A. B. Strong.

3449 Indiana Avenue.

EDITORIAL.

IMPULSIVE AND PARTIAL INSANITY.

The following rule was laid down by the trial judge in the State *v.* Nixon in the district court of Kansas : A person to be held criminally responsible must know the nature of the act, that it was wrong, *and have the will and the mental power to do or not to do it.* The supreme court comments upon this ruling, though it was not directly raised in the points on appeal. The court said, in substance, that it was inexpedient to admit that a person could commit crime of the nature of which he was fully conscious while under the influence of a morbid impulse sufficient to paralyze his

will. The doctrine of "expediency" here affirmed has its prototype in many previous rulings. We doubt if the interests of society can be conserved by the punishment of those who are irresponsible. The question is one as to fact and not expediency. Can a person suffer from disease of the brain, in consequence of which he may commit acts the moral quality of which he fully understands, and which fill him with the greatest distress and abhorrence? We think those of even limited experience in the care of insane will admit the existence of a large number of this class of cases. Many acts of the insane which have little or no ethical significance belong to this category, and we must study the conduct of the insane as a whole. Such being the fact, it is the duty of the courts to admit it and to formulate rules of practice that will conserve society and protect the innocent.

The doctrine of partial insanity, as stated in the same case, that a person may be insane and irresponsible on one subject or set of subjects, and on all others be fully sane and responsible, is much more readily admitted by lawyers than by physicians. It has a certain warrant in the fact that all insanity in which there is not imbecility or complete overthrow of the mind is more or less "partial": that is, it assumes a certain form and direction, in which the mental impairment is most pronounced. The difficulty lies in deciding regarding that "reasonable doubt" for which the law provides. Can an individual who has suffered impairment of his mental functions to such a degree as to develop delusion, be considered sane beyond a *reasonable doubt* in matters not directly connected with that delusion? We think such a view is hardly in accord with our present knowledge of the physiology and pathology of the brain.

The rule of partial insanity, or monomania as expressed by the court, is of extremely limited and doubtful application. A very few cases that might be included under this head have been reported. The writer in a somewhat extensive experience has seen but one, and that may have been imperfectly diagnosed.

SOCIETY REPORTS.

TRANSACTIONS OF THE CHICAGO GYNÆCOLOGICAL SOCIETY.

LXVI. Meeting Friday, May 28, 1886.

I.—LAWSON TAIT. Abdominal Section for Pelvic Abscess.

II.—NELSON. Specimens Removed from a Case of Supernumerary Digits.

III.—PARKES. Uterine Fibroids Treated by the Fluid Extract of Ergot. (Inaugural Thesis.)

IV.—WAXHAM. Occlusion of the Os Uteri as an Impediment to Labour, with a Report of Two Cases.

THE PRESIDENT, DANIEL T. NELSON, M. D., in the Chair.

I.—THE SECRETARY, DR. EDWARD WARREN SAWYER, read the following letter from MR. LAWSON TAIT.

7, THE CRESCENT, BIRMINGHAM, April 14, 1886.

MY DEAR DR. NELSON:—If not too late, I should like to take part in the discussion which was entered into at the Gynæcological Society of your city upon Abdominal Section for Pelvic Abscess. My remarks, of course, are discursive and not very conclusive, because they are based upon only a very few points to which I want to draw attention.

The first is this: I object to the use of words ending in *otomy*, to mean various operations all of which are practically identical in character but different in detail and not one of which can have any exclusive or absolute identification by any particular name. Thus

Professor Christian Fenger, in the discussion, objects to the use of the word laparotomy, and he introduces another which is perfectly new to me and I hope it will never be used again: it is *oncotomy*. Dr. Fenger objects to laparotomy in a sense where I certainly have no objections, and his very objections only show how utterly absurd all these words are. There really ought not to be any such word as laparotomy in existence, because the signification of its derivatives in the use of the people who spoke the language is such that it could not by any human ingenuity be applied to any modern surgical proceeding. Now the words "abdominal section" are sufficiently English to be understood by everybody, and they are sufficiently distinctive to enable us to understand at once that when they are used the peritoneum is opened. I therefore wish through your powerful society to protest against the use of all these stupid words of Greek formation. I wish also to protest against the absurd distinctions drawn by Säger which are quoted by Dr. Fenger on the subject of pelvic abscess.

He distinguishes six kinds of salpingitis.

1. *Septic*, the existence of which I entirely dispute as a specific ailment.

2. *Tuberculous*, which again I deny except that it has an existence as the third and contracting stage of pyosalpinx.

3. *Syphilitic*, not one particle of evidence of this have I ever seen.

4. *Actino-Mycotic*, which is an equally ridiculous subdivision, based on mere theory, not on fact.

5. *Gonorrhæal*, to which the great bulk of the cases belong.

6. *A mixed form*. Instead of this sixth, or mixed form, I would say that there are a great many cases to which we cannot attribute any actual origin, a number of cases occurring in virgins where the existence of gonorrhœa would be an impossibility, and where there was no puerperal mischief.

Dr. Fenger's paper has always seemed to me to be an illustration of the German savant evolving the descriptions of the camel out of his own consciousness. My descriptions, on the other hand, are taken from some hundreds of cases upon which I have performed operations and the history of which I know as completely as it is possible to obtain information.

In Dr. Reeves Jackson's paper there are two points to which I

want specially to draw attention, and they are not of much importance because they are chiefly questions personal to myself.

The first is a passage in which it is said "Lawson Tait, of Birmingham, and Martin, of Berlin, were the first who attempted to prevent the terrible contingencies of pelvic inflammations by attacking the disease at its original seat; Lawson Tait removed the suppurating uterine appendages, Martin operated for suppurating periuterine hæmatocele. Tait operated for a suppurating hæmatoma of the right Fallopian tube in 1878, and he removed both tubes for pyosalpinx, and an ovary for abscess in 1885. In 1885 Martin performed laparotomy in three cases of intraperitoneal hæmatoma, namely, retrouterine hæmatocele." Now accuracy of date in a matter of this kind is rather important for one's own personal reputation, and Professor Reeves Jackson has underestimated my claim for priority by at least seven years. The first operation which I performed for suppuration of the uterine appendages was done on the 11th of February, 1872, and there will be found in the last edition of my book on "Diseases of the Ovaries," twenty-two cases which I had performed up to the middle of August, 1882, without a death. Since then I have operated upon hundreds. The first case of suppurating hæmatocele which I operated upon is published in detail in the same book; it was in February, 1879, and since then I have operated upon thirty-two cases without a death, and all have been completely cured. It will thus be seen that in none of these matters have the German surgeons approached English surgery as rivals in priority. They have been mere followers in every particular, and I regret to say their following has been practiced without that recognition to which our priority gives us every just claim.

The second point is that in which I find Professor Byford speaking in terms of my own work which no words of mine can sufficiently recognize or express my appreciation of, and here certainly his words of caution are worthy of a little note. What I fear, in fact what I already feel, is that the remarkable success which I have had, and of which Professor Byford speaks in such strong terms, is really leading astray those whose opportunities have not been as my own, into the belief that the work is easy, simple, easily acquired and free from risk. It is not so, and unless those who practice it choose to follow me in the rigid precautions and immense care which

I give, not only to the mere performance of the operation, but to the surroundings of my patients and to every detail in connection with them, they will not obtain, they must not expect, the success which I have had. I have said that I fear, in fact, I already feel, that this success of mine is leading people astray, and I want to urge in the name of humanity, as well as for the sake of the art we practice, that there should be less of the indiscriminate rushing into this kind of work which has been already deplored on both sides of the Atlantic.

I am, etc.,

LAWSON TAIT.

DISCUSSION.

PROFESSOR A. REEVES JACKSON said: We ought, I am sure, to feel honored by having among us in spirit, if not in person, so eminent a man as the writer of this letter. Lawson Tait is in some respects the greatest living surgeon, a Gamaliel at whose feet we all find ourselves sitting; and, withal, a man so observant that not a single gynæcological sparrow falls in any part of the world unnoticed by him. I must plead "not guilty" to the charge—made against me by Mr. Tait—of inaccuracy regarding the date of his first laparotomy for pelvic abscess,—the remarks upon this point having been made by another, and not by me. As stated in the letter, his first operation of this nature was done February 11, 1872, at Birmingham, on a patient of Mr. Hallwright. I am sure that Mr. Tait will not for a moment suppose that any of us would willingly do injustice to one whom we all esteem so highly, and from whom many of us have been recipients of acts of kindness and courtesy.

In regard to the justice of Mr. Tait's criticism on the prevalent use of the words ending in "otomy" I do not feel like being an arbiter. Technical words are frequently necessary, and yet, as a general rule, I think it preferable to use simple language. The ordinary English words are commonly sufficient to answer all the purposes of language. Besides, large and unusual words are sometimes embarrassing. When, some weeks ago, Professor Fenger charged me with performing an "oncotomy" I was afraid that I had done something very dreadful, and the worse because I did it without knowing it. I felt very much as the fisherwoman did when Daniel O'Connell in response to her volley of ordinary, undecorated profanity called her a parallelogram. The fisherwoman did not know what to say, and I could not reply; we both had evidently lost the

thread of the discussion. I am glad that Mr. Tait speaks so strongly in regard to the tendency now so frequently indulged in, to perform laparotomies, and that he is willing to correct to some extent by his words the mischief that has been done by his powerful and successful work. It seems that when some persons visit Mr. Tait and witness his success and simple but effective methods, they come back thinking life is a blank unless they can own and manage an abdominal hospital and spend the remainder of their days in the cheerful occupation of removing uteri and ovaries.

PROFESSOR CHRISTIAN FENGER said :

The letter which Mr. Lawson Tait wrote to Dr. Nelson relates in a number of points to my paper on "Laparotomy for Periuterine Abscess" as well as to some remarks which I made before the SOCIETY in a previous discussion. I must, therefore, beg the FELLOWS of the SOCIETY to bear with me if I take up a little of their time in answering Mr. Tait's letter.

Discussing Professor A. Reeves Jackson's paper, I objected to calling the operation in question a laparotomy. According to the Professor's description of the case, he had opened an abscess which was adherent to the anterior abdominal wall. He had consequently simply performed an oncotomy, an operation which, notwithstanding the division of the abdominal wall, does not differ materially from opening a deep-seated abscess in any other region of the body, as *ex. gr.* in an extremity.

Whether opening the abdominal or peritoneal cavity be termed laparotomy or abdominal section or *Bauchschnitt*, is of course a matter of indifference, provided only that the meaning of the word be agreed upon. There is but one way of getting at the signification of a medical term, and that is by learning in what sense the term is employed in the medical literature of the different nations.

I must again maintain that laparotomy is not merely section of the abdominal parietes, but that the word implies opening of the general peritoneal cavity with a view to performing some operation within that cavity. (See *Linhardt's Operationslehre*. Wien. 1862, p. 705, and *Eulenburg, Realencyclopædie*, Bd. II, p. 37.) French authors occasionally use the word gastrotomy instead of laparotomy. Recently the operation has been called peritonotomy, which on account of its correctness should perhaps be preferred to the other terms.

It is of importance to distinguish between a laparotomy and the evacuation of a limited abscess by simply incising the abdominal wall. The two operations differ widely as to their consequent dangers. Where the general peritoneal cavity is opened, a well-known series of precautionary measures is required before and during the operation, in order to protect the patient from general septic peritonitis.

Where an incision through the abdominal parietes leads directly into a limited abscess-cavity, the precautionary measures essential to laparotomy may be dispensed with; the general peritoneal cavity is not opened and there is no fear of general peritonitis. In the latter operation the peritoneum is not seen or not taken notice of, the incision-wound is left open and the limited cavity washed out and drained.

In every country medical authors hold these two operations apart. Opening a perityphlitic abscess, an adherent hepatic abscess or a parametritic abscess above Poupart's ligament is never spoken of as a laparotomy. Whenever we hear or read of a man having performed a series of laparotomies we naturally suppose that he is experienced in performing intraperitoneal operations. Now, many a surgeon has opened a large number of intra-abdominal abscesses and has never seen the peritoneal cavity.

It is evidently important properly to limit the meaning of the term laparotomy; else we may misunderstand the description of a given case, and the statistics of laparotomies will necessarily be rendered valueless.

The next point Mr. Lawson Tait remarks upon is the question of priority of operating for pelvic hæmatocele.

By the mistake of Mr. Tait, part of what I said in the discussion of Professor Jackson's paper is ascribed to the paper itself. I am thus quoted in his letter:

"Lawson Tait, of Birmingham, and Martin, of Berlin, were the first who attempted to prevent the terrible consequences of pelvic inflammations by attacking the disease at its original seat. Lawson Tait removed the suppurating uterine appendices; Martin operated for suppurating periuterine hæmatocele."

In the discussion I stated the dates at which Tait and Martin performed their respective operations. By a typographical error the dates appeared wrong in some of the copies of the transactions

of the SOCIETY. 1885 instead of 1872 was given as the date of Tait's first laparotomy for abscess of the ovary, and 1885 instead of 1876 as that of Martin's first laparotomy for extraperitoneal hæmatocele.

Considering my remarks as a whole and examining my references to the literature on the subject a careful reader would not have failed to recognize in the wrongly printed dates a typographical error.

Lawson Tait performed his first laparotomy for extraperitoneal hæmatocele in February, 1879. (See LAWSON TAIT: *Diseases of the Ovaries*. 4th Edition. London, 1883, p. 346, and Tait's letter.)

Martin performed the same operation for the first time in 1877, and a second time on the 31st of January, 1879. (See A. MARTIN: *Das extraperitoneale periuterine Hæmatom*. *Zeitschrift für Geburtshilfe und Gynäkologie*. VIII Bd., Hft. II, 1882, p. 476.)

It will thus be seen that my statements concerning priority were correct. In the discussion of Professor Jackson's paper I quoted Säger's classification of pelvic inflammations. In criticizing it, Mr. Lawson Tait speaks of "absurd distinctions." I wish to repeat that I regard Säger's classification as complete and correct and in accordance with the laws governing inflammatory processes in all organs of the body.

To Mr. Lawson Tait's manner of criticizing my little paper "On Chronic Periuterine Abscess and its Treatment by Laparotomy," which appeared in the May number of the *Annals of Surgery*, 1885, there is but one answer.

Like all published articles it is open to criticism. If anybody should wish to attack it, I am ready to enter into a discussion of it, provided that tangible objections to it be brought forward.

II.—The PRESIDENT exhibited specimens removed from

A CASE OF SUPERNUMERARY DIGITS.

He said: While I know the condition is not exceedingly rare, I thought the specimen was so beautiful as to be worthy of presentation to the SOCIETY. The specimen consists simply of two supernumerary little fingers, which I found in a beautiful, healthy baby just after it was born, attached by small pedicles, consisting simply of the skin and the vessels needed to supply them, about the middle of the first phalanx of the little finger; the pedicles were perhaps one-sixteenth of an inch in length, just long enough to ligature. They look like little beans; the finger nails are fairly developed in both.

They were very vascular. They looked, before removal, like bangles. This was the sixth pregnancy; the other children were all perfect; no other case of this condition in the family that is known. The condition is usually hereditary. In one there is a very good nail formed, upon the other there is only a slight nail. The mother is in good vigor and health. They were united to the larger little finger about the middle of the first phalanx—one was just about the middle of the phalanx, on the outer border; the other, half way between the middle line and the outer border. They both feel as if there are bones in them—two phalanges in each, the third being represented by the pedicle.

III.—PROFESSOR CHARLES T. PARKES (Rush, 1868,) read the following paper, entitled

UTERINE FIBROIDS TREATED BY THE FLUID EXTRACT OF ERGOT.

My intention is to relate to you the history of four cases of uterine tumor, and to present a few remarks suggested by them. These four cases were treated by the internal administration of Squibb's fluid extract of ergot. They all resulted in recovery by expulsion of the growth.

I found no insurmountable difficulty in giving the medicine, although when given for a prolonged period it creates nausea and disgust in some. This was counteracted, and the pain following its use controlled by combining it with morphine. It seemed to me preferable to the hypodermatic use—the latter being locally painful and often producing abscess, besides it is not followed by any better result. Two of the cases, treated by ergot, when thrown off, proved to be pure uterine fibroma—dense and hard—white and glistening when cut open—consisting of simple fibrous tissue. The other two following the action of ergot were soft myomata—pulsa-ceous and semi-elastic—consisting mostly of connective tissue, confirming the diagnosis made. All four of these were evidently sub-mucous tumors, or so slightly interstitial as to be practically covered only by mucous membrane.

CASE I.—Mrs. S., American, 43 years old, widow, three children, no miscarriages, menstruated first when 16 years old. Never had any noticeable trouble with menstruation until three years previous to my first examination; during these years she had suffered with irregular profuse hæmorrhages which were now continuous, accompanied with exacerbations on the slightest exertion. My first ex-

amination was made February 20, 1876. As my memory brings this patient before me she presented the most perfect example of transparent flesh that I had ever seen. A large, finely formed woman, her flesh looked like alabaster, apparently destitute of blood. The legs were œdematous, the heart beat feeble and rapid, and the slightest exertion was followed by extreme palpitation and the most fearful feelings of suffocation. Her answer as to what she had done for her trouble was that she had taken "quarts of medicine." Vaginal examination revealed an enlarged uterus and patulous os, from which blood was rather freely oozing. The sound entered the uterus about five inches, the handle being deviated forward and to the left side. A diagnosis of submucous uterine fibroid was made.

The treatment adopted was the administration of strychnia and iron, together with wine and good diet for the general condition, and one-half drachm doses of Squibb's fluid extract of ergot every six hours, to either expel or kill the growth. Locally, to stay the hæmorrhage, a small tampon of pulverized alum was applied to the *os uteri* and held in position by ordinary cotton tampons.

The first forty-eight hours' use of the ergot produced quite severe uterine pains, so acute that the patient, in her weakened condition, said they were unbearable. At this visit Professor T. D. Fitch was with me in consultation. The tampon of alum was removed, and Dr. Fitch's examination confirmed the diagnosis made, and advised the continuation of the treatment. As the bleeding had been entirely controlled by the tampon, it was left out. The ergot was continued as before, and a sufficient dosage of morphine ordered, to make the pains bearable if they persisted. No further use of the tampon was required, the uterine contractions never ceased while the ergot was administered. On the sixth day of its use a foul-smelling serous discharge came on, *per vaginam*, accompanied with slight general chilliness and a temperature of 102° F. The patient was assured that the tumor was surely coming away, and encouraged to bear "yet awhile" with her great suffering. On the eighth day the tumor was found in the vagina and removed. It was about the size of a duck's egg and very hard to the touch. After a short period of mild septic trouble the patient passed through a quick convalescence and rapidly recovered. Seen a few months ago she says she has never had any illness since getting rid of this growth, and certainly looks well.

CASE II.—Mrs. P., German, married, five children, no miscarriages, menstruation began at 14, now 37 years old. Seen by myself first in March, 1881. The patient is a robust, hearty woman. Never had any trouble until six months after the birth of last child, about one year ago, when she began to flow too freely and too often—as often as every week or occasionally twice a week. The blood was in large quantity and bright red in color.

The examination revealed an enlarged uterus—it could be felt above the pubis during bimanual examination. The sound entered easily for five inches, the handle deviating forward and to the left. Its use was accompanied and followed by very free bleeding.

Diagnosis.—Submucous uterine fibroid on anterior wall. *Treatment.*—locally the alum tampon was used as in the previous case. Squibb's fluid extract of ergot in half drachm doses every six hours. The patient was ordered to remain in bed. On the succeeding day all the tampon, except the alum, was removed. No hæmorrhage; slight pains complained of. On the second day the pains were very severe and morphine was given to control them. The alum tampon was removed and a carbolized hot water injection ordered three times a day. On the third day pains still severe and a foul-smelling vaginal discharge commencing.

This condition persisted until during the night of the eighth day, when I was summoned to the patient on account of the unusual severity of her sufferings, the messenger, her husband, saying it was just as if she were having a baby. On my arrival the pains had quite ceased. Examination showed the loss of considerable blood, and the vagina was found filled with a large fleshy mass, horribly offensive. The finger could be passed beyond it, and the largely opened cervix recognized. It was seized with a Vulsellum forceps, twisted a few times upon itself, and then delivered. The mass was as large as a closed fist, dark colored and ragged all over its surface and very foul smelling. The patient rapidly regained her usual health, and is well today.

CASE III.—Mrs. E., 33 years old, married, three children living, one miscarriage, menstruation commenced when 14 years of age. Was first called to visit her January 2, 1885, for severe uterine hæmorrhage. She then informed me that she never had any trouble with menstruation until about two years previous.

Shortly thereafter she was operated upon for laceration of the

cervix, without much relief to her trouble, since she had gradually grown worse, so that she was not free from bleeding ten days in the month.

One year previous to my seeing her, the uterus was freely curetted and fuming nitric acid applied to the cavity as a relief for the bleeding. The procedure failed in any good result.

At this visit the bleeding was extreme in degree. Examination revealed the pelvis largely filled with a smooth, doughy mass. After considerable searching the *os uteri* was found high up above and close to the pubis. It could only be found by crowding the finger between the bone and the growth. The growth was exquisitely tender to the touch or any manipulation. Bimanual palpation discovered an uncertain mass above the pubis. The vagina was tamponed temporarily, and morphine administered hypodermatically. The diagnosis was reserved. In my mind it rested between hæmatocele and soft myoma. The tumor was compressible, at least its elements seemed to give way to the pressure of the finger; it was semi-elastic and painful under manipulation, filled the entire posterior half of the pelvis, and the *os* was carried well upward and forward. It might be, and probably was, a myoma of the posterior uterine wall retroverted.

(A few weeks ago I had the satisfaction of seeing the *fac simile* of this case, so far as the character of displacement and the position of the tumor was concerned, in a patient under the care of Dr. Merri-man, although the tumor in Dr. Merriman's case was much harder and more resistant.

Dr. Merriman, with skill and apparently with ease, lifted the tumor out of the pelvis into the general abdominal cavity, after placing the woman in the knee-elbow position—a change bringing much comfort to the patient. I learn that under the use of ergot the growth is already diminishing in size.)

The patient was put upon fluid extract of ergot in one-half drachm doses three times a day. The next menstrual period showed no change other than a diminished loss of blood. In June the flooding was quite free and accompanied with considerable pain. In July everything was as bad as possible, with so much pain that the ergot was discontinued. Repeated examination now narrowed the diagnosis down to soft myoma. The removal of the uterine appendages was suggested, in the hope that this procedure would anticipate the

menopause, stop the bleeding and lead to the gradual atrophy of the growth. In September, consultation was solicited with Professor W. H. Byford, when the patient was etherized and carefully examined. The sound, introduced with great difficulty, owing to the displaced position of the os, passed in over five inches, positively demonstrating the nature of the growth, its consistency showing it to be the soft variety of myoma.

As the patient could not be said to be in absolute danger of her life, the operation was refused by her friends, although the sufferer was willing enough to have it done.

The previous treatment was endorsed by Professor Byford, and its continuance advised.

The fluid extract of ergot was resumed and rendered bearable by morphine.

The October illness was accompanied by slight hæmorrhage, but excessive pain. These uterine contractions continued on after the menstruation ceased, until, during the last week of October, they became labour-like in character. Examination now revealed that the uterus had righted itself, the os was becoming patulous and its edges thinned out; through its opening the projecting tumor could be felt. On the second day of November, pieces of the broken-down mass, horribly offensive, could be seized with the forceps, pulled out of the uterus and cut away.

Chilly sensations began to be felt by the patient, sweatings came on, the temperature ran up to 101° F., and a mild scepticæmia was established. During the following week the pains never ceased. Quinia was administered freely. The vagina and uterus were irrigated with hot carbolized injections, and the mass removed as fast as any of it could be reached, and at the week's end the last remnant was gotten away. The patient was very much reduced physically, but rapidly convalesced, and is now perfectly well, with her menstruation normally re-established. Fully a quart of soft pultaceous pieces of the growth were removed.

CASE IV.—Mrs. L., German, 34 years old, one child, was seen first November, 1885. She had been suffering with increased menstrual flow for a year. She came to me to be treated for an external, painful, labial swelling. It proved to be a vulvo-vaginal abscess. It was opened freely and gave no further trouble. A uterine tumor was noticed and examined. It was found to be of considerable size,—could be detected above the pubis.

She was put upon one-half drachm doses of fluid extract of ergot every six hours.

This she continued for six months steadily, with varying conditions of pain and hæmorrhage, until in April, 1886, the hæmorrhage ceased, pain became very severe, and a shreddy, foul-smelling discharge manifested itself. She was removed to the St. Joseph's Hospital, and after ten days of antiseptic washings and removal of masses of broken-down tissue, the mass was entirely extruded. This patient had also quite a severe septicæmia, but finally recovered and is now well.

Remarks:—Aside from crucial demonstration, it seems reasonable to assert that these four cases were cured by means of the remedy used, and by that alone. It is well known that the most of authorities state that no positive reliance can be placed on the use of ergot. My experience surely, as here illustrated, and confirmed by other cases seen, leads me to think that this adverse judgment must be qualified, especially in the treatment of the submucous bleeding fibroids of the uterus. If the growths be partially interstitial, the less the thickness of uterine tissue between them and the mucous covering, the more certain will the remedy be curative. Of course it will be impossible to demonstrate the exact amount of uterine wall forced contractions will destroy, hence a trial of its worth is desirable in all cases not purely sub-peritoneal and pedunculated. Still I am quite convinced the severity of the hæmorrhage gives one a good reason to speak *positively* of the results to be accomplished by its use. I have not deemed it necessary to look up the history of the first use of this remedy for stimulating uterine contractions. It is sufficient for me to say that my confidence in the remedy and persistence in its use, even when failure of good results seemed certain, has followed directly as the result of the teachings and experience of an honored Fellow of this SOCIETY, Professor Wm. H. Byford, who has never lost an opportunity to urge upon the profession his belief in the specific action of the remedy, and its absolute certainty of cure in many cases. I am quite sure that Professor Byford deserves the credit of being the first to make use of ergot with the idea of destroying the vitality of the growth, and as well, causing its expulsion from the uterus.

The third case shows plainly how absolutely unnecessary any

operation would have been. The removal of the appendages might have stopped the hæmorrhage, but such a perfect cure as now exists could never have followed operation, to say nothing of the harm done by unsexing the woman; still no case could present better reasons for such a procedure, none in which it would have been more justifiable from the indications present. To me it brings the lesson to make oöphorectomy the *dernier ressort* in all cases, certainly to give the remedy used at least a six months' trial without result before operation be sanctioned.

The difficulties attending the differentiation between a distended sack of fluid and the soft myomata was well illustrated by this case. The sensation communicated to the touch was scarcely distinguishable from fluctuation. It was only after repeated examinations under ether, and the use of the sound, that the diagnosis was satisfactorily settled.

The fourth case for a time seemed one in which the treatment would come to nothing. Every one became discouraged. The suffering was increased, and no advance was made, apparently. By persistence the cure was accomplished. In this case operative interference was solicited by the patient, and would have been most readily submitted to, without any urging. If I read aright the indications which authorities give, to justify the resort to removal of the uterine appendages, they were all present in this case, and more too if that were needed. Certainly the final result has proven any such interference would have been uncalled for and lamentable.

I am quite well aware that four cases cannot be considered absolutely demonstrative of any rule, still these four increase the number already published in proof of the curative action of ergot, administered thoroughly, for sub-mucous uterine growths. It is impossible for me to understand how some good authorities can still assert their disbelief in ergot; in fact, calling it the most inert and disappointing of all drugs. No possible argument can disabuse my mind of the belief that its action was positive and certain in the cases related. No law has as yet been evolved fixing even by approximation the period of time required for the effects of the medicine to show themselves. The idiosyncrasies of the patient, the thickness of the uterine envelope, the distance from the mucous membrane, the purity of the drug, and many other conditions,

render it scarcely possible that any such law can ever be laid down. The trial should be made patiently and persistently, just so long as the patient's condition will warrant its continuance, and a complete expulsion of the growth, followed by rapid recovery in many cases, will be the reward.

IV.—PROFESSOR F. E. WAXHAM read the following paper, entitled
OCCLUSION OF THE OS UTERI AS AN IMPEDIMENT TO LABOUR, WITH
A REPORT OF TWO CASES.

Having met with occlusion of the os but once in several hundred cases of labour, and knowing of a number of physicians of extensive practice who have never seen this condition present at the time of confinement, I am convinced that it must be of rare occurrence, and the history of two cases may not be uninteresting.

Mrs. S., primipara, twenty-nine years old, German, fell in labour about 9 P. M., February 21, 1885. The membranes ruptured soon after the commencement of labour and the amniotic fluid gradually drained away.

The patient was seen between 3 and 4 A. M., at which time the pains had become very severe and frequent. Upon examination the head was found low down in the inferior strait, almost presenting at the vulva, and covered apparently by a thin membrane through which the advancing head threatened to burst with every pain. Upon the most careful digital examination, no os could be discovered nor the slightest indication of one. Professor Nelson was summoned and promptly responded. His more experienced finger detected a very slight dimple in the center of the presenting tissues. By keeping the finger upon this slightly thickened tissue, he discovered that it became very much thinner with every pain, while as the pain subsided the tissues assumed a very slightly umbilicated appearance. By firm and continued pressure upon this suspicious spot an opening was at length effected and the os gradually dilated. As the labour proceeded slowly, and fearing the result to the child of so long a delay of the head in the pelvis, and the os being fully dilated, the forceps were applied. The child was delivered without injury to the mother, but it was asphyxiated and required considerable effort in resuscitation. Professor Nelson stated that this was the second case that had ever come under his observation, and kindly gave me the history of the following one. He was called to attend a lady in her first confinement, a Swede, twenty-three years old, and

married about one year. Making a hasty examination, he found a well-formed cervix but did not detect the os. On returning a few hours later, the head had descended to the inferior strait and was indeed presenting at the vulva and covered by the cervix, which had become so thin as to resemble the membranes. The membranes had already ruptured and the amniotic fluid had gradually escaped. There was no appearance whatever of the os. It could not be detected with the finger, and the head seemed about to burst through the uterine tissue. The patient was placed before a window, the labia separated and careful search made for the os. Only after a most careful search was it found. It was patulous only to the extent of admitting the very finest surgeon's probe. After this had been introduced and worked about, a second probe was passed, and by separating them the os was gradually and sufficiently dilated to allow the finger to enter. The os was then rapidly dilated and labour progressed normally.

I find the literature on this subject quite meager, many of our writers on obstetrics omitting the subject entirely, while others refer to it very briefly.

Schroeder alludes to it in the following terms :

"As complete atresia of the os prevents conception, it follows that an occlusion of the os, observed in labour, must have taken place during pregnancy.

"Very frequently there is a superficial and easily separable agglutination of the external os. It is due to an inflammatory process of the lips of the os from a previous blennorrhœa. During labour the advancing head is seen to push the lower uterine segment forward to the outlet, and to thin it more and more. This thinning may be so great that the head appears to be covered only by the membranes. By an accurate examination the os feels like a small and soft dimple directed greatly backwards. If during a pain the finger or uterine sound be forcibly pressed against the dimple, the agglutination of the os will suddenly give way. The os itself now very rapidly dilates and labour proceeds without impediment. Often the pains themselves succeed in breaking down the adhesions of the os.

"It very rarely happens that the os only partially dilates after the agglutination has been torn through and remains rigid so as later to require incisions. There is very seldom so firm an adhesion between the maternal and fetal membranes in the immediate vicinity of the internal os that the lower uterine segment cannot retract over the ovum. Separation by the finger or rupture of the membranes renders possible the dilation of the os."

Schroeder also refers to the fact that a firm cicatricial band may occasionally occlude the os, resulting from inflammation of the cervix or cauterization :

When these firm adhesive bands prevent dilation of the os there is danger of rupture of the vault of the vagina unless incisions are made and assistance given. The cicatricial closure of the os, is frequently incomplete; more or less fine openings remaining pervious, rendering conception difficult but still possible, is believed by Schroeder to frequently result from ulcerative inflammation during the lying-in state.

Leishman, in discussing this subject, remarks that

"There are some cases in which there seems to be actual occlusion of the os. Impregnation in the case of an absolutely occluded os is as impossible as that the normal function of menstruation should be carried on, and therefore we must assume, in such cases, that the closure must have taken place subsequently to the entrance of the seminal fluid. It is of course possible that the os may remain open to a very limited extent, and yet the state of the tissues renders distension impossible, so as practically to constitute an impediment as insurmountable as actual occlusion would be."

Playfair gives the following brief intention of this condition :

"Agglutination of the margins of the os uteri is occasionally met with and must of course have occurred after conception. It is generally the result of some inflammatory affection of the cervix during the early months of pregnancy. Usually it is not associated with any rigidity or hardness, but the entire cervix is stretched over the presenting part and forms a smooth covering in which the os exists only as a small dimple and may be very difficult to detect at all. Occlusion of the os from inflammatory changes sometimes so alters the cervix that no sign of the original opening can be discovered."

All our authorities agree that the occlusion of the os is the result of inflammatory change occurring subsequent to impregnation. It is a noteworthy fact that in both these cases the membranes ruptured and the amniotic fluid escaped in the very early stages of labour, showing that the membranes were adherent to the uterine tissue about the internal os. As the internal os dilated, rupture of the adhesions and of the membranes necessarily followed.

The discussion of the papers read by Professor Parkes and Professor Waxham was, on motion, deferred until the June meeting.

Mr. Lawson Tait, of Birmingham, and Professor T. Gaillard Thomas, of New York, were elected Honorary Fellows of the Society.

Professor E. C. Dudley proposed for honorary fellowship Protheroe Smith, M. D., M. R. C. P., of London.

W. W. JAGGARD, M. D.,

Editor.

July 10th, 1886.

2330 Indiana avenue.

CHICAGO MEDICAL SOCIETY.

Meeting, June 7, 1886.—THE PRESIDENT, E. J. DOERING, M. D., in the chair.

PROFESSOR A. REEVES JACKSON read a paper entitled
THE INTRA-UTERINE STEM IN THE TREATMENT OF
FLEXIONS,

exhibiting the stems used. The essayist began treating uterine flexions with the stem pessary in 1870. Prior to that time the only methods he had employed were gradual dilatation and incisions. The results were so unsatisfactory that he sought for a safer and more successful method. Having received the impression that the use of the stem pessary was more hazardous than either the dilating or cutting plans, he commenced its employment with misgiving, and did not rely wholly upon it, but preceded it with either gradual stretching or slight incisions. In two cases this mixed method was followed by pelvic abscess, a sequence which he had never observed when the stem alone had been used. All cases of uterine flexion are not accompanied by dysmenorrhœa or sterility, yet when there exists a relationship between these symptoms and an existing flexion the latter must be looked upon as a mischievous factor and one that should be removed. He had never treated any case of flexion in which dysmenorrhœa was not present, although coexistent barrenness has been frequently an additional incentive to the patient to undergo efforts at cure.

He preferred Chambers' bifurcated vulcanite instrument, although the divergence of the branches *below* the internal os uteri was a radical defect in the instrument as ordinarily

used. Frequently the branches should be closed so that the stem might be practically single in that portion which traverses the cervix. His method is as follows: A flexion and its direction being diagnosticated, a flexible bougie is passed through the bent portion of the canal and quite to the fundus. The depth of the canal being carefully noted, a pliable stem, consisting of the distal portion of the same, or a similar bougie, one-third of an inch shorter than the ascertained depth of the canal, is selected for introduction. A flange or bulb is formed upon the outer end of the stem by rolling upon it a section of rubber tubing. The woman being placed on the back, in Simon's position, and the os uteri exposed with a speculum, the stem, either grasped with a dressing forceps or mounted upon the end of a piece of pointed wire, is passed entirely into the uterus. A large tampon of cotton moistened with slightly alumized glycerine is pressed against the bulb of the stem, and allowed to remain one or two days. The tampon is removed and replaced at suitable intervals, until the tendency of the stem to leave its position disappears. After this yielding stem has remained from one to three weeks, according to the degree of tolerance manifested by the uterus, it is removed and a thicker one put in its place. This likewise is permitted to remain a week or two, and is then replaced by a Chambers stem. While not very much, or, indeed, any change of shape is to be expected in consequence of the use of the flexible stem, yet, in several instances, a very considerable alteration took place within a few weeks, or even a few days, and in a few cases it was found unnecessary to resort to a rigid instrument at all. Usually, however, it had been necessary to use an inflexible instrument for from three months

to a year—not continuously, but for periods of three or four months, with an interval of a week or two, during which the stem was removed in order to test the degree and permanence of the improvement. The feature of this treatment which is essential to its safety and success is its slow and gradual conduct, and the non-observance of this necessity has been the cause of dangerous results and failures to cure.

The drawbacks attending this method of treatment were :
1. Difficulty in retaining the instrument in position ; 2. Pain ;
3. Hæmorrhage ; 4. Pelvic inflammation—all except the first being common to all other methods of treatment. A table comprising the details of sixty-four cases treated by the intra-uterine stem alone was given, showing the ages and social conditions of the patients, the direction of the flexion and the result of the treatment. Of the entire number, 42 occurred in married and 22 in single women. Of the former, 8 had borne children ; the other 34 were sterile. Of the latter, 8 subsequently bore children. A cure of the flexion followed in 40 ; of the remaining 24, four were improved and relieved of dysmenorrhœa. In 20 the result was unknown. The ages of the patients ranged from 19 to 39 years. The uterus was anteflexed in 50 and retroflexed in 14.

In conclusion, the author said : “I believe the principle of the intra-uterine stem in the treatment of flexions to be correct ; and it need not be dangerous—at least, no more dangerous than any other effective method. I further believe that by its use more cases of uterine flexion can be cured than by any other means at present in vogue. The conditions of both safety and success are watchfulness, patience and slow progress.”

PROFESSOR D. T. NELSON, in opening the discussion, said: Mr. President, I am glad to have heard the paper, and think it is a most valuable one. The cautions that it gives are certainly those that all of us should remember, to wit: the length of the instrument used compared with the length of the uterus, the slow and gradual dilatation of the uterus before using the inflexible stem, and removing it on the occurrence of bad symptoms. In recent years I have not been in the habit of using the stem pessary as much as my friend Professor Jackson, but I think that with his present instructions I shall try it again. Not that I have not tried gradual dilatation, and the gradual, slow, careful straightening of the uterus, but I have not by this particular means caused the pessary to be retained as constantly as he has. The vulcanite pessary, and the various other forms, including the Wright or Chambers modification, I have used, and with many of the difficulties the doctor has narrated. But with his modification it seems to me very likely we can use them with better success. The irritation produced by them has been a great drawback, and in recent years it has been my habit rather to use the form of pessary recommended by one of our members, Professor W. H. Byford, the slippery elm bougie. It produces a gradual dilatation of the uterus, and often produces remarkable results in the treatment of the flexions, and I have had no bad results from its use. One point that the doctor did not emphasize sufficiently is that the instrument should not be retained long if it produces pain, but it should be removed and the patient put in bed. I should have preferred to have him give directions for the patient to remove the instrument if the pain continued for a long time; for if it does, the instrument ought to be removed, and if he should happen to be out of the city and the patient should be unwilling for anyone else to see her, serious

disease might commence before he returned and removed the instrument. For this reason it is, and always has been, my plan to have the instrument so arranged, by a string or something of that sort, that the patient can remove it herself. We should remember that the instrument should be less than the uterus by a third of an inch; that the uterus is to be put into its proper shape, in a splint, as it were, and then expected to grow right; that it is not cured when it is straightened; if it has been displaced for a considerable time there has been an atrophy of the uterine tissue on one side, and it may take weeks, or perhaps months, to alter the nutrition of the different parts of the organ, and until that change has taken place it is not likely that the patient is permanently cured, unless pregnancy has taken place and altered the nutrition of the parts. As to pelvic inflammation, the author has been more fortunate than most of us in the use of stem instruments. One point I wish to add, viz.: That when there is any possibility of gonorrhœal poison lurking in the genital passages of the female, greater care should be taken in the use of such instruments, or operative procedure of any sort, for that matter. I feel, when there is reason to suspect that this poison has once been implanted, that I hardly dare to introduce sound, pessary or other instrument in the interior of the uterus, and believe that such an instrument should be used with the greatest caution in these cases.

PROFESSOR E. C. DUDLEY said: Mr. President: The marvelous freedom from dangerous inflammation following the treatment of uterine flexure by forcible dilatation and by the application of the intra-uterine stem, furnishes a striking illustration of the fact that the human uterus will sometimes endure an immense amount of abuse. My own preference is generally for the former method, as advocated by Goodell,

Ellinger and others. My experience has only tended to confirm me in the impression that forcible dilatation is reasonably satisfactory in its results, and that the results are reasonably permanent. I would seldom advocate the use of intra-uterine stem pessaries for retroflexion unless the flexure were of the so-called congenital variety, and therefore associated with atrophy of the uterus, a condition which is very rare. The essayist has, perhaps for reasons of brevity, omitted to make the distinction between physiological and pathological ante flexion. This distinction within a few years has been quite clearly defined by Schultze, Fritsche and others, and their teachings are now recognized as correct by many of the leading gynæcologists throughout the world. In the light of their investigations the old diagram of Kolrausch, which for more than twenty years has generally formed the basis for the illustrations of the normal position of the uterus, is now quite generally discarded. The uterus has no absolutely fixed position, but it has a certain normal range of movements. The angle between the body and the cervix may vary, according to the varying quantity of material in the rectum and bladder, from zero to at least 45° ; Fritsche says 90° , and his observation is possibly within the physiological limits. When the bladder is full the uterus becomes straight and the angle of flexure disappears. When empty, the angle may measure from 45° to 90° , and yet not be pathological. It is, moreover, probable that a flexure of much less than 45° when the bladder is empty should be considered pathological. Furthermore, ante flexion, even within the defined limits, is always pathological if there be immobility at the angle of flexure; indeed, a displacement exists whenever the organ is restrained from its normal movements. In a

word, antelexion is pathological if the mobility at the angle of flexure be increased or decreased beyond the physiological limits, or absent. Want of a clear understanding of these simple facts has led to the invention of innumerable pessaries for straightening the antelexed uterus, and they have been persistently employed, to the detriment of the patient, in cases of perfectly physiological antelexion. Suppose a case : The uterus is shown by digital examination to be so low in the pelvis that when the bladder is empty its entire anterior wall is easily touched. The physiological flexure, which may be from 45° to 90° , is then perfectly apparent to the examining finger ; the symptoms of vesical irritation are attributed to the flexure, and an antelexion pessary is accordingly introduced which produces pressure upon the anterior wall of the uterus. The symptoms disappear, and the conclusion is erroneously formed that the relief was dependent upon the straightening of the uterus, when in reality the pessary has, perhaps, produced no such effect, but has merely lifted the uterus to its health level, and thereby relieved the symptoms, which were due not to flexure but to descent. The same manner of treatment has often been followed by relief from similar symptoms attributed to anteversion, when in reality the pessary, by lifting the cervix to a higher level, has exaggerated rather than reduced the anteversion. For this reason all vaginal pessaries especially designed for anterior displacements are in no respect superior to the ordinary Hodge pessary ; indeed, they are objectional, because in overcoming the descent they press upon the uterine wall and thereby cause irritation of the organ. Antelexion is only a symptom which may result from any one of a variety of widely different causes, such as adhesions,

uterine fibroid, parametritis posterior, or failure of the puerile uterus to develop at puberty. It would indeed be irrational to attempt the relief of a symptom due to such diverse causes by any single plan of treatment. The essayist would not attempt to do this, but he has neglected to specify the particular flexures for the relief of which he deems the stem applicable. Inasmuch as many of these flexures are dependent upon the uterine or peri-uterine inflammation, and inasmuch as there is reason to conclude that dysmenorrhœa and other evils are more the result of the inflammatory state than of the flexure itself, I would advise that the stem be reserved for cases which are not relieved after the inflammation has been removed by safer methods. Such a plan would certainly restrict the use of the stem to a very small number of cases, because the symptoms for which it is to be employed would so often disappear upon the cure of the inflammation. It is indeed probable that the dysmenorrhœa for which the author has employed the intra-uterine stem may depend rather upon some faulty nutrition, or upon some disease of the uterus independent of the flexure, and that the stem therefore gives relief by some change which it produces in the nutrition of the organ. If this be true, it would then follow that anteflexion *per se* really furnishes no positive indication either in itself or in its results, but that the same treatment would be equally effective under similar conditions without the co-existing flexure. Congenital anteflexion of the puerile uterus is undoubtedly a condition for which the stem may be considered one of the legitimate means of treatment. Sterility, whether associated with pathological flexure or not, has been successfully treated by the stem. Winckel says that the presence of the

instrument may give a better development to the menstrual decidua and thereby make a better bed for the ovum. One objection to the stem, strongly urged by Schultze, is that by its use the physiological flexure is overcome, and it therefore may be said to produce, rather than to relieve, displacement. But we should not permit theoretical considerations to bias our judgment in face of the author's carefully observed results. His contribution is certainly a valuable one, and shows that the instrument, at least in careful hands, is less dangerous than is ordinarily supposed. The author's freedom from inflammatory results is doubtless due to his judicious preparation of each case by means of the olive-tipped bougie. Undoubtedly the observations of Professor Jackson and others must be considered as placing the intra-uterine stem among the useful and approved resources in the treatment of these troublesome cases, but even at the risk of prolixity I again protest against the indiscriminate treatment of purely physiological antelexion by any means soever.

DR. H. P. MERRIMAN said: I have very little to add to what has been said. The use of the various methods that have been proposed seem to me to aim at one given end,—to change the nutrition of the uterus. Forcible dilatation does that to a certain extent; it is temporary, however, in its action. Incision produces an alterative effect and accomplishes its purposes. It does not succeed a great many times, neither does the temporary action of dilatation. The use of the stem pessary, on the other hand, succeeds because it is keeping up a continuous pressure upon the parts. Now I am decidedly in favor of this treatment by stem pessary; it strikes me that it is the only rational method of treating these flexions, which are pathologi-

cal. After the cause of a flexion has been removed,—that is, the inflammation of the uterus, or the pressure of a tumor, or pressure of heavy clothing, or whatsoever causes it,—the uterus does not always return to its natural state, and then we need to introduce some method for restoring it to its normal condition, and I do not know any more rational method than this one. This paper strikes me as a very valuable one. The valuable part of this treatment seems to me not to be so much in the use of this stiff stem as the earlier treatment by the flexible stem, where, by continuous pressure upon the parts, we are able to accomplish the same effect as passing a sound in chronic cases of gleet, producing a healthy action in a diseased organ and thus producing absorption of a pathological exudate. It strikes me that the doctor recognizes this condition, for often before using the stiff Chambers stem when he has been using these bougies, in a great many instances he has found the treatment has nearly cured the disease, and if it had been continued longer I believe a cure would have been effected. The intra-uterine stem, by continuous pressure, induces an alterative action of the tissues, the absorption of exudates and a gradual return to the normal condition of the uterus, and a natural tendency toward a straightening of the uterine canal as the uterus becomes healthy.

PROFESSOR SARAH H. STEVENSON said: I have listened to the paper with a great deal of interest, and also to the discussion. My methods are different. I have used the stem pessary a great deal in former years, but for the past two years I have discarded it entirely as some of the results were unfortunate, although I think I have never had any serious results from the use of the stem. I now use, and have for the past two years, the galvanic current entirely, and it is applicable to all cases, especially in those in which the stenosis is so great as not to

admit the passage of the bougie. I have never found a case in which I could not use this method with satisfactory results.

DR. H. T. BYFORD said: I quite agree with Dr. Dudley in his trite but very true remark, "It is wonderful what an amount of abuse the uterus will stand," and I congratulate Dr. Jackson that he has discarded incision and dilatation in treating flexions. I also congratulate him upon his good success. I believe the mortality from this treatment—the treatment by the intra-uterine stem—has been estimated to be from $\frac{1}{2}$ to 1 per cent. by those who have investigated heretofore. Whether it is so now I do not know. The present per cent. of inflammation of the cellular tissue varies from 2 to 5 per cent., as nearly as I can determine. There are an immense number of cases in which the stem caused inflammation, which have never been published. It seems to me that in considering this subject the reason for this treatment should be made more apparent. There are some who use it as a splint or merely to straighten the uterus; others use it as a stimulant on account of its continuous pressure. There is no doubt it stimulates and temporarily straightens the uterus, but it is well known that in time, in a large proportion of these cases, the uterus again becomes flexed. The question arises, should we try to straighten the uterus? As Drs. Dudley and Schultze have said certain flexions are supposed to be physiological (which I don't believe), the uterus is supported in the neighborhood of the internal os, which may be said to have a fixed place in the pelvis. The elasticity of the tissue will allow that part of the uterus to be pressed in nearly all directions, but it will come back. The fundus may bend forward or backward and remain in such position for some time, and the uterus still be in a normal position. During youth the child who sits too much, has a curved spine, etc., having a uterus pretty firmly

fixed at the cervix, will often have the uterus pressed upon by the abdominal contents in the wrong direction. The normal resistance of the uterus to flexure will be gradually overcome (the uterus may even become atrophied), and a flexion results which, when slight, may be called a physiological flexion, and may exist without causing trouble; but it is pathological. The elasticity which the uterus of normally firm structure displays during the filling up and emptying of the rectum and bladder is hardly worthy of the name of flexure. Any considerable permanent flexure occurring in this way must be the result of want of firmness in the structure of the uterus. If we are going to use a supporter we should use it when the flexure is forming, not after it has been produced. If we will use such treatment as will remove the improper pressure upon the uterus, viz., by straightening up the spine, using exercise, etc., etc., a stem will be seldom necessary, because whatever flexion has already been produced will usually not cause unpleasant symptoms. If it has gone to the degree of producing atrophy of the uterus we may need to use a stem pessary, but as a stimulant to the uterine tissue rather than a straightener of this organ. I have seen uteri bent almost like a horseshoe become impregnated and return almost to their former degree of flexion. The intra-uterine stem, in view of its slight action as a support and powerful action as a stimulant, and its notoriously bad record, should be the last resort. The frequency with which Winckel uses the stem is now about once in 218 cases, while formerly he used it about once in 50, and he is using it less all the time. In my experience and the experience of a great many others, if we cure the acute or subacute inflammation of the uterus and then apply stimulating measures we nearly always accomplish the cure of the flexion by safer means. There are, of course, a few cases left in which

the use of the uterine stem may be justifiable, but I think they are exceedingly rare. If those present, following Winckel, use them only once in 218 times, but few of us will live long enough to do a great deal of harm.

PROFESSOR T. D. FITCH said : Mr. President : I think a paper so commendatory of a measure as this, will perhaps lead many of the members of the profession to adopt it without proper precautions and without realizing the dangers which attend the use of the intra-uterine stem. I believe it is a very dangerous instrument to use. I am an advocate, as you all know, of pessaries, but I do think the intra-uterine stem a dangerous instrument, and that in less careful hands than Dr. Jackson's serious results will often follow. My own experience in the use of it has been limited, for the reason that I became alarmed from the bad reports of cases by Dr. Chambers himself, the inventor of this bifurcated instrument which Dr. Jackson has exhibited. If the same precautions are used that are advised by Dr. Jackson, I think, as a rule, it might be entirely harmless; no, I should hardly be able to say entirely harmless, or entirely free from danger, but I think the precautions which he has adopted have been very ingenious and would in the majority of cases prevent serious results from the intra-uterine stem. His use of the bougies preceding the use of the inelastic stem, accustoming the uterine mucous membrane, or the uterus itself, to the presence of a foreign body within its cavity, is very ingenious, and a thing I should never have thought of myself. Although I have tried these pessaries occasionally, my great difficulty has been to keep them in the uterus ; I might open them in any direction I pleased, spread the blades as widely as I pleased, and they would slip out—

they caused so much uterine contraction that they would be expelled from the uterine cavity into the vagina, and I have always been disappointed in the results from their use. For several years while I was in active practice I had adopted the treatment of Peasley for flexion and stenosis, whether caused by exudation or spasmodic contraction of the os internum ; that is, by the use of his uterotome dividing the stricture at the internal os, and then gradually dilate the canal until I could introduce a No. 12 or 14 sound through the os internum. This was introduced every second day from one week to two weeks, until it ceased to be followed by pain and by hæmorrhage after its introduction, showing that the os internum had been thoroughly dilated and the incision had healed sufficiently so that no blood followed the use of the sound. After the sound was introduced I used a large glycerine tampon for the purpose of depletion and relief from irritation and to support the uterus ; if it was an inversion it would hold the fundus up so as to assist in relieving the flexion to a certain extent at least, and preventing the occurrence of inflammation. I have treated a great many cases in this way and with entire satisfaction, and never had a case of acute inflammation of any kind occur as the result. I believe, however, that a majority of cases of flexion are attended with versions more or less. I don't believe that flexions occur so frequently as is generally supposed, unaccompanied with version ; the uterus is tipped over more or less in connection with the flexion, and in connection with the treatment which I have suggested I have always corrected the version, and used the ordinary support or pessary to keep the uterus in its proper place, thereby relieving any contraction or pressure which would keep up

the flexion. I think the paper an admirable one, and the Doctor's precautions in the use of the instrument he has advised commendable.

DR. H. C. FEDER said : I would like to ask for information. In the report of these sixty cases of inversion and retroversion it has not been stated how many were accompanied by prolapsis, or what was the cause of flexion ; whether in married women getting up too soon after confinement, or whether from acute inflammation. The paper does not go into the facts and state whether the uterus is lightened and thereby goes back of itself to a normal position, nor does it inform us if this could be assisted by giving medicine internally. Much depends upon the state of the patients at the time of treatment,—whether they are in a healthy condition, or whether they have some specific blood disease in which medicine would assist in the treatment. And if the medicine has an alterative effect, how much benefit is received from the medicine and how much from the pessary.

PROFESSOR JACKSON said, in concluding the discussion : Mr. President: I feel that I ought to express my thanks for the courtesy with which this paper has been received. It is only a thirteen minute paper, and there are a great many things in the domain of medicine that are not in it, and a great many questions might be asked on subjects growing out of and connected with it which I could not answer if I were disposed to. The intention of the paper is simply to demonstrate the efficacy of a single remedy in correcting a single deformity. Questions as to whether the uterus was prolapsed, whether the patients had taken antibilious pills, or had cachexia, really do not enter into the consideration of the subject. I supposed that was

perfectly plain from the fact that no mention was made of anything beyond the mere condition of deformity. I am very glad so many excellent ideas have been added to it. The suggestion of Dr. Nelson as to the patient being able to withdraw the pessary is excellent, and is never omitted. I never introduce a pessary that I do not attach to it a silken cord by means of which the patient can withdraw it in case of necessity. As a rule, every patient should be able to withdraw any instrument placed in the genital passages; the regular attendant may not be at hand when needed, there may be an aversion on the part of the patient to calling in another physician, and she should have the proper means at her disposal. The remarks of Dr. Dudley as regards the distinction that should be made between pathological and physiological conditions resulting in flexion are quite proper, and I agree with him fully. We all know that the conditions preceding and accompanying these bent conditions of the uterus are very various; and in many cases no stem, incision, or other means will have a beneficial effect, although they may for a time cause the uterus to be straight. But the mere straightening is not always the main element of cure. When the uterus has been chronically fixed there will be a thinning of the side towards the angle, showing local failure of nutrition either as cause or effect of the bending. Straightening, therefore, is one element of cure in a uterus where there is insufficient nutrition, and I do not believe that any other means exclusive of this cures flexion. But it must not only be straightened, but its circulation must be fully restored, otherwise the organ will resume its bent condition. We cannot put a splint on the outside of the uterus, and the intra-uterine stem affords a means by which the uterus may be kept straight enough to allow of circulation on each side. The method of treating flexions by forcible and extensive dilatation

does more than dilate. It straightens, also. A bend may be just as acute in a large tube as in a small one, and mere stretching will not suffice, and its results usually not be permanent. Gradual dilatation is much more promising, and next to the method by the stem I would prefer it. I have only treated cases of flexion in which dysmenorrhœa was present, a symptom that interferes with the patient's health, and the dysmenorrhœa was usually cured or relieved. I do not think this such a wonderful success; only about two-thirds of the cases were cured, some were simply improved, and in some I do not know the result. Yet I think there is no other method that will do quite as well. The suggestions made in the discussion accounting for the safety and success of the treatment are, I think, correctly attributed to the preliminary measures—the slowness of the straightening and the promptness with which any tendency to harm could be met. The object was to accustom the uterus to its tenant, so that by and by it would accommodate a larger one, and in this way the uterus has been made to receive and tolerate the presence of an inflexible instrument. In one case a Chambers stem was retained twenty months, and I think if the patient had not returned and told me she was wearing it it would be there yet. It produced no unfavorable symptoms.

DR. A. R. SMALL reported

A CASE OF PISTOL-SHOT WOUND.

May 2d, 1886, he was called to see F. R., aged 23, who, a few minutes previously, had received a shot from a No. 32 pistol. Patient was suffering from shock, difficult breathing, and excessive pain in the left leg below the knee. The ball had struck the right eighth rib, about two inches external to the costal cartilage. Sensation was lost in the right leg below the knee. Motion was not impaired in the right leg, though the sensation was lost below the knee. The left leg was hy-

peræsthetic below the knee, and motion slightly impaired. A drainage-tube was inserted about two inches into the wound, and the wound dressed antiseptically. The patient complained of no pain except in left leg below the knee, where the pain was excessive. Morphia was given hypodermically in sufficient doses to control the pain. Nothing was allowed the patient the first twelve hours but ice, and occasionally water. About 10 P. M. there was evidence of internal hæmorrhage, and the patient seemed to be sinking. Milk was then given in small quantities frequently. The morning of the 3d he had rallied somewhat.

The urine was drawn by the catheter every eight hours, and contained blood. There was no expulsive force to the bladder. Respiration was normal after the first two hours.

On the afternoon of the 3d patient became delirious, and continued so, with occasional lucid intervals, until death, which occurred at 4.20 P. M. of May 4th.

Autopsy five hours after death. Rigor mortis well marked. Unfortunately, through a misunderstanding, the undertaker had preceded us and injected his preserving fluid, so that we were unable to determine exactly the amount of blood in the right pleural cavity. It must have been quite large, however, as the right lung was entirely collapsed. The ball made a clean round hole through the center of the eighth rib on the right side, about two inches from the costal cartilage, passed through the lower side of the right pleural cavity, without injuring the lung, passed through the diaphragm, right lobe of the liver, and superior portion of right kidney, and through the intervertebral foramen between the eleventh and twelfth dorsal vertebræ, on the right side of the spine, and lodged against the posterior surface of the body of the eleventh dorsal vertebra, just within the spinal cord, where it was so firmly

imbedded that it could not be removed without disarticulating the spine, which, for sufficient reasons, we did not do.

Though we found the right lung collapsed, respiration had been normal except the first two hours after the injury.

DR. ALFRED S. HOUGHTON read a paper on

THE DANGER IN SPECIALISM.

He said that specialties had greatly increased medical knowledge and skill, and had secured for many much reputation. Hence young practitioners grasp any excuse for becoming specialists. But man is not a machine, but a complicated organism, and disease is complex, one organ sympathizing with another; hence it is necessary to examine every portion of the body and treat all organs affected. Hence there is danger in a specialist limiting his sphere of action and usefulness to an unnecessary degree. Another danger is that specialists are apt to become egotistic, and give rise to utterances which they will afterward regret.

DOMESTIC CORRESPONDENCE.

HOT-WATER BATHS IN PUERPERAL PERITONITIS.

TO THE EDITORS OF THE *Chicago Medical Journal and Examiner*.

Gentlemen:

In February, 1874, Mrs. F. was attended by two physicians, for what was pronounced to be peritonitis, for three weeks, she growing worse steadily. Her condition at that time was as follows: High fever, feeble pulse, 130, tympanitis so pronounced that a regular arch was formed from the neck to the pubes, severe pain and inability to swallow even a tablespoonful of fluid; urine had to be drawn with catheter. In that state the prognosis was bad, and the physicians agreed that she could not live twenty-four hours longer.

I then commenced to immerse the patient in hot water raised to the temperature of 150°, and kept her in the bath at that degree of heat for an hour, and continued to do so three times a day for the first four days, then twice a day for the remainder of the week, after which I used the hip bath once a day.

When first put into the bath she was so weak and the tympanitis so pronounced, I could not keep her head from sinking under the water while the body floated. I had recourse to a heavy log surmounted by a pillow, on which I rested her chin, she being face down in order to facilitate the escape of gas *per anum*, which took place in about half

an hour after immersion. It was most offensive, and the room had to be disinfected and ventilated to prevent her from vomiting. The gas continued to escape in large quantity during each immersion. The benefit derived from the first bath was so marked that for the first time in three weeks she slept soundly for at least four hours, and on awakening could take some burned brandy. She gradually gained, and on the third day asked for the bedpan, under the impression that her bowels were about to be moved. On removing the pan I was surprised to find from a pint to a pint and a half of pure laudable pus instead of fæces. The discharge of pus continued for about a week, when it ceased entirely. She made an excellent recovery, no fistula being discoverable, and in the month of June traveled from Laramie City, Wyoming, to St. Louis. She is still living and enjoying tolerably good health.

Yours, etc.,

F. W. FITZ-GERALD, M. D.

318 Centre avenue.

July 14, 1886.

ABSTRACTS.

RECENT PROGRESS IN DERMATOLOGY.

Henry J. Reynolds, M. D., Professor of Dermatology in the College of Physicians and Surgeons, of Chicago, in his annual address as Chairman of the Committee on Dermatology in the Illinois State Medical Society, which convened at Bloomington, May 18, 1886, said:

“It is difficult if not impossible to determine in a year’s time whether certain advances and discoveries in this department, as in other departments of medical science, are really such or are only so-called. It would not, however, be speaking in very flattering terms of the intelligence of the writers of the vast array of literature that is yearly presented to the medical profession, nor of those who eagerly peruse the same, were we to assume that even only a little in the direction of advancement had been presented. While, however, but comparatively little perhaps in this department has been presented during the past year, that can in every respect be regarded as real advancement, very many important clinical facts and experiences have nevertheless been presented, which, in addition to establishing new theories, serve the equally important purpose of tending to show the fallacy of old ones. Therefore, not presuming to present all that has appeared on record in this light during the past year, I shall ask the indulgence of the SOCIETY while I enumerate such as have come to my notice or been deemed worthy of mention, together with some personal remarks regarding the same, and leave the matter as regards the de-

termination of the truthfulness and value of the so-called advances for further investigation and your wise judgment to decide."

He then referred to the grouping together of several rare conditions by Duhring under the one general head of what he called dermatitis herpetiformis, and to certain other changes that had been recently made in the nomenclature of skin diseases.

He next, in his remarks on acne, spoke of the procedure recently proposed by Sherwell, of Brooklyn, for that disease, viz., the passing of sounds in the male urethra; and cited the cases more recently reported by Denslow, of St. Paul, as corroborative of the beneficial results of this supplementary measure in the treatment of acne. For the deep or indurated form of this disease he spoke of the method which he himself usually adopted, and which he believed was original with himself. He always lances those apparently papular indurations deeply, and invariably finds pus at the bottom, with a tendency to burrow still deeper, rather than come to the surface. He then, to prevent the wound from healing over on the surface—which it is otherwise sure to do, and leave the miniature subcutaneous abscess to go on as before, and remain indefinitely—passes a probe dipped in carbolic acid to the bottom and fills the whole incision from bottom to top with a small piece of absorbent cotton and leaves it to granulate from the bottom, which it will never fail to do, leaving only an almost invisible scar.

He referred to a suggestion made by Fox, of New York, as to the possible, if not probable, cure of leprosy, if the proper moral effect could be brought to bear upon those patients, stating that the moral effect was usually depressing in the extreme, banished as they usually are from society, and imprisoned for

life, as it were, with only the promise of a most miserable existence and a lingering death.

He referred briefly to the pigmentary syphilide and to a case reported by Dr. R. W. Taylor, of New York, and one by himself of this condition.

He then cited the treatment suggested by Bulkley for carbuncle without incision and poultice, viz: an ointment containing ergot and oxide of zinc locally, and sulphide of calcium and saline laxative with iron internally. He also spoke of the treatment so highly recommended by Dr. Hibberd, of Richmond, Ind., of applying with friction every three hours oleate of morphine.

He then, in speaking of urticaria, said that Lassar claimed to have reduced the frequency and cut short the duration of violent attacks of this disease by giving twenty-four grain doses of salicylate of sodium repeated every two hours until three doses have been taken.

In ringworm of the scalp Alder Smith recommended seven grains of chrysarobin to an ounce of chloroform, his theory being that the chloroform dissolved the sebaceous and fatty substances away, and favored thereby the penetration of the chrysarobin. A. J. Harrison, he said, for this affection, applies first a mixture of one-half a drachm of iodide of potassium to an ounce of liquor potassii. When this has penetrated he applies a solution composed of three grains of bichloride of mercury to the ounce of sweet spirits of nitre; his theory is that the liquor potassii softens the hair bulbs and facilitates the penetration of the iodide of potassium. Then when the mercury mixture is applied the biniodide is formed at the bottom of the follicle, a chemical change which he claims to be very beneficial.

The writer then referred to the use of chrysarobin inter-

nally, so highly recommended by Stocquart a short time ago for various skin diseases. For theoretical reasons and from experience he did not believe the drug had any special value as an internal remedy; and even the original advocate did not, of late, claim so much for it as formerly.

Brief reference was then made to the use of cocaine in dermatological practice. He said he had found it to be of some service to allay itching in certain cases of eczema and in pruritis ani, in strong solution. He had used it to relieve the pain incident to the removal of superfluous hairs by electrolysis, but the remedy was not sufficiently absorbed by the skin, as a rule, to be very beneficial.

BOOK REVIEWS.

1. THE STUDENT'S MANUAL OF VENEREAL DISEASES; *being a Concise Description of Those Affections and of Their Treatment.* By BERKELEY HILL, M.D., *Professor of Clinical Surgery in University College, London, etc.*; and ARTHUR COOPER, M. D., *Surgeon to the Westminster General Dispensary, etc.* Fourth edition, revised. Philadelphia: P. BLAKISTON, SON & CO. 1886.
2. A MANUAL OF DISEASES OF THE SKIN. By BALMANNO SQUIRE, M. B., *London, Surgeon to the British Hospital for Diseases of the Skin, etc.* Chicago: A. N. MARQUIS & Co., *Clark and Adams streets.* 1886.
3. CUTANEOUS MEMORANDA. By HENRY G. PIFFARD, A. M., M. D., *Clinical Professor of Dermatology, etc.* Third edition. New York: WILLIAM WOOD & Co. 1885.

4. *VENEREAL MEMORANDA; a Manual for the Student and Practitioner.* By P. A. MORROW, A. M., M. D., *Clinical Professor of Venereal Diseases, etc.* New York: WILLIAM WOOD & Co. 1885.

1. The fourth edition of the manual written by Messrs. Hill & Cooper, has all the merits of those which preceded. It is, like many of its fellows, defective in the important matters on which it does not and cannot touch ; but this is true of all hand-books concisely written. For example, the important subject of chronic prostatitis is here considered in four lines ; and, if the student who purchases the volume should be confronted with a case of this character and should desire to know how to make a differential diagnosis between chronic prostatitis of blennorrhagic origin, and one of the forms of the too common tubercular affection of the prostate, he would have to look elsewhere for his facts.

All said, however, the manual is an excellent guide to the student in the field which it concisely covers.

2. Squire's little volume comes to us with the musty aroma of a past generation of dermatologists ; and is an interesting souvenir for the collector of dermatological bric-a-brac of the day when Willan taught how to classify diseases of the skin by the external lesion. For example, under the heading "bullæ," we find discussed "pemphigus and rupia!" Can we trust our eyes ? Is this the day when at least two different forms of bullous exanthem have been shown to originate from ingestion of the iodine compounds alone ? Have we been sleeping like our friend Rip Van Winkle, and is this the rusty flint-lock that lay at our side when we went up the mountains twenty years ago ? This is not a laughing matter ; it is one of the most interesting

little souvenirs of the way dermatology was taught years ago that one can pick up for its price.

3. Piffard's work in its third edition, with all the author's odd opinions on "rheumides" and the like, is far in advance of the Englishman's miniature book. It is well known, and deserves the estimate that the young gentlemen place upon it when they study the cases in the clinic. It is, however, surpassed by Duhring's little manual.

4. Morrow's little companion to Piffard's manual is really well and concisely written, and bears evidence of having been thoughtfully prepared. It is epigrammatic in its terseness, accurate in its statements, and useful in many ways to the beginner; scarcely to others. There are objectionable features which may be pardoned in the general excellence of the book. For example, when we read, that "a prostitute is safer at night than in the morning, when contagious secretions have had time to accumulate," we feel like entering a protest against all such literature. Far better direct men how to light cigars in the vicinity of nitro-glycerine. Dr. Morrow retains the nomenclature which includes such terms as "ecthyma-form syphilide," "impetigo-form syphilide," etc. We have before this protested against describing one disease in terms of another. When the student reads of a "variola-form syphilide," he wonders what variola looks like; and, if advanced enough to know, he naturally asks, "in what stage of the evolution of the variolous papulo-vesiculo-pustule does it resemble the special syphiloderm here described?" better go back to the fathers of medicine, who called diseases of the skin by names which children could understand, such as "honey," "wolf," pig, etc.

COMPARATIVE ANATOMY AND PHYSIOLOGY. By F. JEFFREY BELL, M. A.; *Professor of Comparative Anatomy at King's College. 16mo, pp. 555, Illustrated. Philadelphia: LEA BROTHERS & Co. Chicago: A. C. McCLURG & Co.*

We have here an interesting treatise, the subjects being introduced in a somewhat original manner. The author first directs attention to the question of living matter, treating it comprehensively as relating to animals and plants, beginning with a definition of protoplasm, and following it up in its development into tissues and organs. He then, as he claims in his preface, "writes about organs rather than groups of animals," giving details of structure. This will prove to be a most valuable addition to the library of the student who desires to acquaint himself with the fundamental principles concerning the anatomical structure, development and physiology of the organs of lower animals, and for comparing the same parts of one animal with those of another. The writer's style is lucid and terse. It affords one pleasure to peruse the pages of this production.

F. C. S.

PRACTICAL ANATOMY. A MANUAL OF DISSECTIONS. By CHRISTOPHER HEATH, F. R. C. S.; *Professor of Clinical Surgery in the University College, London, etc., etc. Revised by RICKMAN J. GODLEE, M. S., London, F. R. C. S. Octavo vol., pp. 567, Illustrated. Philadelphia: P. BLAKISTON, SON & Co.*

Professor Heath's work has reached its sixth edition. It is a trifle enlarged over preceding editions, and has fourteen beautifully colored plates representing practical dissections,—the arteries and veins being stained red and blue, respectively. The wood-cuts throughout the entire book are quite satisfactory, showing the finer lines more distinctly than is usual

in works of this character. The reviewer mentions this fact because of its importance to the young student of medicine, to whom a correct picture often "talks clearer than words." The directions for making a dissection are explicit and to the point. The advice of the author as to the "method of study" should be heeded by all dissectors. The descriptions are accurate and the book fully sustains its past reputation as a practical working guide for the student. F. C. S.

BOOKS RECEIVED.

Reports of the Surgeon-General of the Navy. Six volumes, 1879, '80, '81, '82, '83, '84.

Hygienic and Medical Reports United States Navy 1879.

Traite Elémentaire d'Anatomie Médicale du Système Nerveux. Par Ch. Tere. Paris: Bureaux du Progres Medical.

Our Penal Machinery and Its Victims. By John P. Altgeld. A. C. McClurg & Co., Chicago.

A Treatise on the Diseases of the Nervous System. By William A. Hammond, M. D. New York: D. Appleton & Co. Chicago: A. C. McClurg & Co.

Medicine of the Future. By Austin Flint (Senior), M. D., LL. D. New York: D. Appleton & Co. Chicago: A. C. McClurg & Co.

Analysis of the Urine. By Hoffman & Ultzmaun. New York: D. Appleton & Co. Chicago: A. C. McClurg & Co.

Bright's Disease and Allied Affections of the Kidneys. By Charles W. Purdy. Philadelphia: Lea Brothers & Co. Chicago: A. C. McClurg & Co.

Medical and Surgical Directory of the United States. R. L. Polk & Co.

PAMPHLETS RECEIVED.

- Report of the Board of Managers of the Pennsylvania Hospital 1886.*
Is Disease of the Uterine Appendages as Frequent as It Has Been Reported?
By Henry C. Coe, M. D.
- The Influence of Sewerage and Water Supply on the Death Rate in Cities.*
By Erwin F. Smith.
- Report of a Case of Cæsarean Operation, with Some Comments.* By Edward W. Jenks, M. D.
- Typhoid Fever in Philadelphia.* By Henry Leffmann, M. D.
- Tetanus.* By N. Senn, M. D.
- Comments on Pasteur's Method of Treating Hydrophobia.* By Charles W. Dulles, M. D.
- On the Necessity of Organization of the Medical Profession.* By F. E. Daniel, M. D.
- On the Limitation of the Contagious Stage of Syphilis.* By F. N. Otis, M. D.
- American Public-Health Association. Preliminary Circular.*
- The Present Status of Abdominal Surgery.* By N. Senn, M. D.
- Excerpta from the Biennial Report of the Board of Health of Louisiana.*
- A Brief Synopsis of the Various Points Involved in the Coarse Examination of the Brain and Spinal Cord.* By Francis X. Dercum, M. D.
- Malarial Manifestations Due to Traumatism.* By Henry C. Coe, M. D., M. R. C. S.
- Esthetics of Medicine.* By H. A. Cottell, M. D.
- Enucleation with Transplantation and Reimplantation of Eyes.* By Charles H. May, M. D.
- Marion County, Florida; an Ideal Winter Climate.* By George Troup Maxwell, M. D.
- Report of a Case of Successful Transfusion in Typhoid Fever.* By W. S. Whitwell, A. M., M. D.

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ORIGINAL COMMUNICATIONS.

HEPATIC ABSCESS, WITH PRESENTATION OF FOUR CASES.

By L. L. MACARTHUR, M. D., *Lecturer on Histology, Chicago Medical College.*

[Read before the Chicago Medical Society, August 2.]

Abscess of the liver is in our latitude a disease of extreme rarity as compared with the tropics, where the great majority of cases have been observed and studied.

This, so far as the literature of the subject is concerned, has had the effect of tincturing the writings of our present authorities in temperate latitudes with ideas perhaps applicable in other climes, but certainly, in a measure, false here.

The ascribed causes of abscess of the liver are as numerous as the writers on the subject. But in fact they may be sifted down to quite few classes. I would subdivide them first into,

I.—Intrinsic, or causes resident in the liver itself; and

II.—Extrinsic, or causes external to and independent of the gland.

To the former would belong acute congestions (said to re-

sult from heat and cold), tumors, ecchinococci, biliary calculi, or lumbrici in bile ducts.

To the latter, infective emboli, whether carried through the portal vein or hepatic artery, traumatism, alcoholics in excess, and high temperatures, surgical operations or lesions anywhere in tract of porta vena or its communications.

And here it might be of interest to state that there have been men of recognized ability who claimed that all cases not traumatic were the result of infective emboli. Of these were Frerichs, Budd and Carrington. This, however, was because their cases were ones met with in our zone, which I shall endeavor to prove are of a different type from those seen in India.

We may divide all abscesses of liver into either,

I.—The idiopathic,

II.—The infective or embolic,

III.—The traumatic,

in the order of their frequency, respectively.

I.—Concerning the first variety, I would say that because of ignorance as to the causation they have been termed idiopathic. This variety is met with in the tropics: has become known through the reports of army medical officers, chiefly British, as occurring in military men, and forms the great majority of all reported cases. It is usually single, large, and, according to the opinions of medical officers there stationed (Waring, Macpherson, M'Lean, *et. al.*), to be entirely independent of traumatism or pathological lesion; but they offer no other explanation than "the climate." If I might be allowed to theorize, I would suggest a possible explanation based on the facts that:

(1) it occurs in foreigners more frequently than in natives: (2) in those formerly accustomed to rich animal diet: (3) in the indolent and luxurious rather than in those exercising and of frugal habits; (4) in those of a gouty or rheumatic diathesis.

Now it is true that anything that will decrease very largely the alkalinity of the blood will cause a precipitation of the bile; *i.e.*, the formation of biliary calculi, both in the gall bladder and in the bile ducts. In all probability the nuclei for the cystic calculi originate in the bile ducts and are carried to the bladder, there to increase by concentric deposits. Now just such are the conditions of many of the beef-eating Englishmen, and consequently the formation of biliary calculi in the bile ducts, with occlusion and consequent abscess as a result of the foreign body. In reports of some of the cases examined, the bile ducts have been thus occluded. Such calculi would be more likely to form in such a climate than here. As to this form of hepatic abscess, I can only believe it exceedingly rare in our zone.

By all odds the most frequent abscess with which we meet belongs to the second group of *infective abscesses*.

There being two channels of infection, there are two subclasses of abscesses here.

I.—Per arteriam hepaticum (the pyæmic abscess).

II.—Per portam venam.

The first variety need detain us but a brief time. They result from infective emboli, having escaped detention in the pulmonary plexus, being detained in the hepatic plexus simultaneously with other emboli in other plexuses, more particularly the renal and pulmonary. Such emboli may come from lesions of continuity in any part of the body, most fre-

quently compound fractures. As aseptic surgery increased such cases became fewer and fewer; *i. e.*, pyæmia and pyæmic abscess of the liver are becoming rare.

II.—When we recall the fact that all the blood from the abdominal organs, intestines, colon, stomach, spleen, vermiform appendix and (partly) prostate, etc., is returned to the general circulation by way of the liver, we can readily understand how infective lesions of any of these portal radicals may permit poisonous and infective particles to reach the liver and set up there secondary inflammations.

Hence dysenteries accompanied, as they are, by ulcerations of the intestines, cause quite frequently the trouble under consideration. Indeed, so frequently is hepatic abscess complicated by dysentery that some of our eminent pathologists have sought to find here the causative relation. The four cases which I desire to present for your consideration were all complicated in this manner, and post-mortem examination in two of the cases revealed distinct ulcerations. Numerous other lesions would here suggest themselves, *e.g.*, typhoid ulcerations (Peabody), rectal ulcerations, operations about anus and rectum, and cystotomy.

III.—Thirdly, we have the traumatic abscess, this following injury of some kind to the liver substance, whether from direct or indirect violence. To the former belong cases like the one reported by McLean as following a blow over the liver; or by Otis, in which one followed a sword-thrust, or finally in a class of cases formerly thought to be dependent upon peculiar cerebral lesions from falls on vertex, but which Henry Morris explains as more probably resulting from laceration of liver-tissue by the fall, because of its own weight.

Symptoms.—A word as to the nervous supply of the liver. It, like the lungs, has but very little sensation, being supplied chiefly by sympathetic, left pneumogastric and right phrenic, and so inflammatory processes may go on here without much notice being taken by the patient, just as in the lung huge cavities appear almost without the knowledge, so far as pain is concerned, of the patient. So in the liver the symptoms will vary greatly according as pure liver-tissue or the peritoneum and adjacent organs are affected; *i. e.*, 1°, to the location (in the liver) of the abscess and, 2°, its size; 3°, the other tissues involved, lungs, stomach, pleura, pericardium, 4°, and its causation being of first, second or third classes. When deeply situated and small, there may be no local symptoms whatever, only those of “pus somewhere,” chill, fever, sweating, etc., with general malaise, and death result from the “silent abscess” bursting. When larger they will be dependent upon the organ or organs involved in its efforts to find an exit from the body. Pleural or pulmonary and diaphragmatic symptoms if upwards; vomiting, diarrhœa, etc., if into stomach or intestines; swelling, tenderness, and œdema of abdominal wall if by forward perforation. Locally, there is generally a sense of weight, and an uneasiness on jolting, as in metritis. Tenderness and acute pain will depend upon the extent to which the peritoneum is involved. Usually there is some increase in hepatic area, and when this is present some bulging of the side. The temperature is not very high unless the peritoneum is involved considerably, when the constitutional symptoms simulate those of peritonitis. At such times there is present an important symptom, which I find but seldom mentioned in the literature on the subject—I only

recall Flint's passing mention of it, and the one by which I stumbled upon and made the diagnosis in three cases,—I refer to a peritoneal friction-sound, corresponding exactly to that of pleurisy, but far beyond the pleural area. Dr. Peabody emphasizes the fact that there is usually a very marked melancholia existing. The skin is usually of a dirty, muddy appearance, but rarely icteric. Reports of urinalysis of cases state the urine is free from bile-pigment. Inability to lie on the right side may be present.

Sometimes a pain radiates up the back to the right shoulder, and is said to be of diagnostic value.

The *anatomical characters* vary according to location and cause,—in the tropical variety, single and large ; in the infective, smaller and often multiple. The pus said to be at times of a laudable character. In the cases which I examined it was always of a chocolate color, through blood-coloring and liver-detritus, and not offensive. Lining the abscess cavity, or rather floating in its contents, are long, many-branching shreds of vessels, which interfere greatly with efforts at aspiration with a needle. The general law of abscesses holds good, that they open towards the point of least resistance ; and so, if on the superior surface of liver, through the diaphragm into pleura, lung or pericardium ; if below, into the stomach, duodenum or intestine, anteriorly through the abdominal wall and posteriorly between the ribs or into the vena cava.

Diagnosis.—According as the symptoms are distinct and numerous, or few and general, will the diagnosis be easy or impossible. One of the cases which I will report will be of the latter character. If more careful physical examinations

were made I think the frequency of post-mortem diagnosis would be greatly lessened.

Care should be taken to differentiate between pleurisy or pneumonia of right lower lobe and hepatic abscess opening in this direction. Cancer of the liver, echinococcus and inflammation of the gall-bladder, ought not to be confounded with it. In two of the cases coming under my care I completed the diagnosis by use of a carefully cleaned hypodermic syringe. This instrument in competent hands could be used with far more frequency than it is at present without any damage ; even if penetrating perfectly healthy liver-tissue it can do no serious harm, if clean.

Prognosis.—The mass of medical opinion, tinctured as it has been by the reports of the Indian surgeons, is that the prognosis in this affection is *decidedly* unfavorable. To this opinion I wish to take exception, at least in such cases as we are likely to meet with in our climate, for I firmly believe that, with the new era of antiseptic surgery, the verdict ought to be modified in this, as it has been in every other branch of abdominal surgery. Let me quote some of the recognized authorities:

Macpherson says, "Prognosis is generally unfavorable, yet there is a chance if the abscess finds an exit for itself." "When air gains access, the result is seldom favorable."

Henry Morris, who was selected to write the article on the subject in the *Encyclopædia of Surgery*, a work in every way abreast of the times, says, "Prognosis unfavorable—especially if infective." "Recovery may take place if the pus *finds* an exit."

The prognosis will depend upon: I.—the kind; II.—location; III.—number and size.

Treatment.—It has become a surgical axiom that the earlier an abscess be evacuated the better. But in the literature the opinion seems to predominate that these abscesses are an exception, and some authors even go so far as to advise non-interference. With our present knowledge of antiseptic surgery, I believe a diagnosable abscess of liver can be opened without increasing the patient's danger either by Volkmann's or Grave's method. Certainly the plan of "*laissez faire*," of "letting nature take its course," ought to be given up, and dependence not be placed simply upon the routine treatment by tonics, stimulants and anodynes.

Macpherson says, "When pus has once formed the time for all active treatment is passed." Then really is time for it to begin. "As soon as *fluctuation* is felt use the aspirator." Don't! Because you can't empty such an abscess, and the treatment is only palliative, and may result in killing the patient by the escape of pus into the peritoneum.

McLean, who writes the article for Reynold's "System," says, "If it be true, as I believe it is, that the most favorable route an abscess can take is through the right lung, and the most unfavorable, *i. e.*, giving least number of recoveries, is through the abdominal wall, it appears to me unjustifiable to expose the patient by an operation to the risk of admitting *air* with all its mischievous properties into the cavity of an abscess." Here, in the light of our advances in surgery, need we fear the mischievous consequences of a little air?

Or again, Dr. Lowe, of the Madras army, than whom few have had a larger experience with this affection, says:

"Nothing can be more different from another than the method of the surgeon on the one hand and nature on the

other. The surgeon discharges the whole contents of the abscess at once, *air* (awful thing) takes the place of the pus, and however great the relief, the result is disastrous. Decomposition sets in, in the discharges of the cavity, unhealthy extension of the suppurative process, and the patient succumbs.

“I have attempted to imitate nature, but all in vain; air finally entered and the result was fatal.”

I have to present four cases of liver abscess, three of which occurred during my internship at Cook County Hospital, and the other at St. Luke's Hospital.

In two of the Cook County Hospital cases operative procedures were instituted by Volkmann's method, and recovered; in the third, the expectant treatment was adopted, and death resulted; in the fourth, a diagnosis was not made, because of absence of characteristic symptoms.

2139 Wabash avenue.

SUPPURATING VENEREAL BUBO; WITH REMARKS ON A METHOD
OF SUBCUTANEOUS TREATMENT AND REPORT OF CASES. *By*
SCOTT HELM, M. D.

[Read before the Chicago Medical Society, August 2, 1886.]

The object of the present communication is not so much to treat of the pathology and symptoms of suppurating inguinal bubo, as to call attention to a method of treatment I have employed in some twenty-two cases which have occurred in my own practice during the past three and a half years. I have had no opportunity to give it an extensive trial, as I have had no hospital or dispensary facilities since I have employed this method.

The term bubo, although used in reference to an adenitis in almost any locality, should only be used to designate a circumscribed inflammation of the lymphatic glands of the groin.

In reference to the etiology of bubo I will enumerate chancre, chancroid and gonorrhœa, traumatism, septicæmia, or erysipelas consequent on injury to the inferior extremity. Of these, those incident to chancroid are the most commonly met with. The bubo resulting from gonorrhœa is a very rare form of the disease. In the *résumé* of cases given below there is one of which there was no doubt as to the gonorrhœal origin. The pathology of bubo, according to Armstrong, is an absorption by the lymphatic vessels of an irritating substance carried to the gland, the usual process of inflammation ensuing in consequence thereof. Sometimes this is limited to the gland; occasionally the adjacent tissues are involved. Microscopical section of such a gland shows hyperplastic formation of the cellular substance and reticulum. Rokitansky considers that the former process is more extensive than the latter.

Fox says that whenever a bubo is produced by the chancroidal pus which has found an entrance into and through the lymphatic vessels, this is certain to suppurate and to produce a chancroidal ulceration in the groin. This is not correct, for the inflammation may subside and the enlarged gland become smaller by the absorption of the neoplastic tissue. The inflammation of many of these glands subsides spontaneously, and still more so under appropriate treatment. However, there may be but little absorption and chronic induration remains, or necrosis of the gland substance results in the formation of pus. With the non-suppurating buboes this paper has nothing to do, so that I will proceed without further discussion to the description of the mode of procedure which I have adopted in those cases which go on to suppuration, and

a report of its use in my hands, to which method I desire to call your attention.

The advantages which are claimed for this method of treatment are, 1st, that when there are two or more suppurating buboes in the same chain of lymphatics, the second or third appears higher up or further away from the initial sore than the first one. Therefore, by placing the first glandular abscess in a perfectly aseptic condition and absolutely protected from any foreign or septic matter in the external atmosphere, the encroachment of the inflammation on the neighboring glands is thereby prevented. 2d. There is absolutely no scar or unpleasant after-appearance.

My attention was directed to this course in the following manner :

In April, 1884, I was consulted by a young man with an inguinal bubo on the right side, subsequent to chancroid of the frenum of the prepuce. It was already distended with pus, which was evacuated in the usual manner, and he was directed to return on the following day, which he failed to do. He did return, however, a week later, when he had another abscess in an adjacent gland. This was followed by a third, and then the three communicated by sinuses. He finally recovered, but was left with a chain of cicatrices in the right groin, which was anything but a thing of beauty. In August of this same year this young man's brother came to me with a bubo in the left groin and requested, if possible, to be saved from such a condition as his brother presented. I determined to aspirate this one and proceeded as follows: the parts were thoroughly cleansed and the needle of a hypodermic syringe introduced and one-half drachm of pus withdrawn. Then the cavity was washed out with a two per cent solution of carbolic acid, and subsequently injected with ten grains of iodoform suspended

in one-half drachm of glycerine. The needle was then withdrawn, and after the parts had been wiped perfectly dry, the point of puncture was coated with a film of collodion, a compress and bandage being applied over all. He was directed to return on the following day, when no apparent change had taken place; but on the third day the swelling began to subside, and nine days after was almost wholly gone. I saw him again in October, when he reported that there was no evidence of there ever having been any trouble. During the operation, especially during the introduction of the needle and the washing out of the cavity, he complained bitterly of the pain, and I determined at the next opportunity to employ the ether spray before beginning operations.

CASE II. Contracted gonorrhœa three weeks previously, which was followed by an enlargement in the left groin two weeks later. A large bubo presented itself, in which slight fluctuation was detected. This case was aspirated in the same manner as the previous case, with the exception that the ether spray was first employed for the purpose of local anæsthesia. This proceeding succeeded admirably until the washing out of the cavity, when he complained of considerable pain. The undoubted gonorrhœal origin of this case made it of especial interest. This case made an equally good recovery with the first. The greatest difficulty experienced was the inadequacy of the instrument employed, and the glycerine proved a poor menstruum in which to hold the iodoform in suspension. Soon after that I began experiments with oleic acid as a menstruum. This substance, as described in the U. S. Pharmacopœia of 1880, is a yellowish, oily liquid, gradually becoming brown, rancid and acid on exposure to the air; odorless, or nearly so; tasteless, and, when pure, of a neutral reaction. Specific gravity, 0.800 to 0.810.

Oleic acid is insoluble in water, but completely so in alcohol, chloroform, benzol, benzin, oil of turpentine, and the fixed oils. At 14° C. (57° F.) it becomes semi-solid, and remains so until cooled to 4° C. (39.4° F.), at which temperature it becomes a whitish mass of crystals. At a gentle heat the acid is completely saponified by potassium carbonate. If the resulting soap be dissolved in water and exactly neutralized with acetic acid, the liquid will form a white precipitate with test solution of acetate of lead. This precipitate, after being twice washed in boiling water, should be almost entirely soluble in ether.

Oleic acid, $C_{18} H_{34} O_2$, does not belong to the "fatty acid" series, but differs from the corresponding acid of that series (stearic acid $C_{18} H_{36} O_2$), by having two atoms of hydrogen less. It belongs to a series derived by oxidation from alcohols, which, like allyl alcohol, $C_3 H_5 OH$, have two atoms of hydrogen less than the normal mon-atomic alcohols, like propyl alcohol, $C_3 H_7 OH$. The alcohol, however, from which oleic acid is derivable is not known. Oleic acid is mono-basic, as is shown in the formula $HC_{15} H_{33} O_2$. Commercial oleic acid is obtained as a by product in the manufacture of glycerine and candles.

It is very necessary that the preparation used should be absolutely pure, and I have experienced a good deal of difficulty in obtaining such a specimen; all that I have been able to obtain in the market being dark brown and rancid. Parke, Davis & Co., of Detroit, however, made for me two specimens, one from soap and the other from oil of sweet almonds, which were what they should be.

Until quite recently I have used iodoform suspended in the oleic acid, which was a much more stable preparation than with the glycerine. Lately I have substituted iodol for iodo-

form, and found that it will remain in suspension in the oleic acid, and further than that, causes no symptoms of intoxication such as I experienced in two of my cases. The instrument which is now used consists of a barrel with a capacity of two drachms, and which is mounted on either side by two rings, for the fore and middle fingers, and a ring in the end of the piston for the thumb. There are three needles, two ordinary aspirator needles of different sizes, and one a canula mounted with a trochar. To these (whichever one may be in use) is attached the section in the center of which is a stop-cock, the opposite extremity of which is attached to the barrel by a smooth joint.

To recapitulate, the method is as follows:

The parts are thoroughly cleansed; the ether spray is used for the purpose of local anæsthesia; then the canula, attached to the stop-cock section and mounted on the trochar, is inserted into the center of the abscess; the trochar is withdrawn and the stop-cock turned in order to prevent the introduction of air. The barrel is then attached at its sliding joint and the pus withdrawn and the quantity noted. The barrel is then carefully washed and a two per cent solution of carbolic acid injected and the cavity thus washed out. After this has been withdrawn the iodol or iodoform, suspended in the oleic acid, is injected in like quantity to the amount of pus evacuated, after which the needle is withdrawn and the point of entrance, after being carefully dried, is coated with a film of collodion and a compress and bandage applied over all.

I have now employed this plan in twenty-two cases, and have had so far but one failure. In this case, the nineteenth, the patient went on a protracted spree the next day, and when I saw him next he had a chancroidal ulcer in the groin.

In one case—a mounted policeman—an induration like a

large buck-shot still remains. This man kept right on duty during treatment. One case had a double inguinal bubo, but in no case were there two in the same chain of glands.

209 Thirty-first street.

THE RELATION WHICH DIPSOMANIA BEARS TO FORENSIC MEDICINE. *By* EDWARD C. MANN, M. D., *Member of the Medical Society of the County of New York.*

The present law holds drunkenness to be no excuse for crime. The disease of dipsomania is not drunkenness. The state of intoxication is merely one of many symptoms of the disease. True dipsomaniacs are totally irresponsible for acts committed immediately before, during and after attacks, just as epileptics are, because of their intellectual condition before the paroxysm of inebriety—on account of the impulsive character of their actions and on account of the toxic delirium with which it is often followed. The great reason why the dipsomaniac is not responsible is, because he is not master of his desire to drink. Even in his lucid intervals, the dipsomaniac is not a normal man, and there is a modified responsibility attached to all his acts. The dipsomaniac is a sick man to be cured, not a criminal to be punished.

Dipsomania, the great diagnostic mark of which is an irresistible craving for alcohol in some form, coming on at regular intervals of either day, week, month or year, as the case may be, may be hereditary and evolved with the natural evolution of a person's organism, or it may be due to post-natal conditions.

Paroxysms of dipsomania are always preceded by depressive insomnia and excessive nervousness, like the other insanities.

What, now, is the real essence of this disease? It is deranged organic or special sensation or impulse which manifests itself, not as in ordinary insanity, by suicidal or homicidal impulse, or by the morbidly erratic feeling which misleads the judgment and conduct of the kleptomaniac, pyromaniac or nymphomaniac, but owing to the changing and misleading subjective impressions of the dipsomania he is impelled against his will and judgment, by a blind, irresistible impulse, to seek in excessive indulgence in alcohol for the relief of this subjective morbid condition of his nervous system. The craving is beyond the control of the patient. He cannot help it. His drinking is the product of disease. He is misled and perverted in the exercise of his psychic powers by abnormal condition of his brain and centric nervous system. I have seen inebriety or dipsomania in its hereditary forms exhibit, 1st, an abnormal aptitude, requiring an additional excitant factor to develop it into active morbid expression; 2d, the inborn defect so great as to require only the natural organic evolution of growth to reveal it; and, 3d, still greater, not requiring even this to unfold it, I have seen it displaying itself in states of organic retrogression and nerve-instability, so extreme as to be perceptible at the earliest period when the display of mind is perceptible at all, idiocy, imbecility and infantile insanity.

Morbid organic conditions, therefore, lie at the root of this disease. Take the case of a lady where normal character is pure and correct, where intellect is vigorous, who in habit is most abstemious, who, as a rule, never drank anything stronger than tea or coffee or water. This woman becomes depressed without adequate cause, suffers from insomnia, suffers from great nervousness. Then comes on a craving or impulse for alcohol, and perhaps a fondness for low society. She drinks till she can drink no more, until intoxicated, perhaps drinks

for several days ; is then horror struck and filled with remorse, and is perhaps looked upon with horror by her nearest and dearest friends. Now, why has she done this ? Surely not because she wanted the liquor and merely chose to indulge in alcohol to excess. She has obeyed an impulse or craving which she could not resist, which very likely she fought against. She could not successfully fight against the subjective morbid change in her organism which caused the craving. That has to be removed, if at all, by a careful course of medical treatment. That woman is not responsible either for her paroxysm of dipsomania nor for any overt act which she may commit in it, and she is liable to commit suicide, or homicide, or to become a kleptomaniac or to be nymphomaniacal. I have treated a score of such cases, and it behooves the law to respect medicine when the latter declares authoritatively that dipsomania is a disease, the subjects of which are laboring under a species of mental alienation, and not responsible beings. The subjects of this disease demand the protection of medicine and law, and not fine and imprisonment, and from my personal experience of fifteen years I cannot make my plea for them too earnest.

The disordered impulse or craving for alcohol, and, in like manner, for chloral and opium and some other drugs, dominates the character and morbidly masters the reason and the conduct. My experience and observation show the frequent interchangeability of inebriety and dipsomania with grave diseases of the nervous system, in which the neuropathic diathesis prevails. The dipsomaniac tendency of the constitution in some families seems vicarious, with the acknowledged or recognized neuropathic. I have frequently seen one branch of a family to show insanity, epilepsy or

organic brain disease, and another to reveal the neuropathic taint in dipsomania. The chief triumphs in the therapeutics of dipsomania belong to the plan of treatment which places the patient under medical supervision and restraint, maintains the physiological tone of the vaso-motor system, and which re-establishes the perfect stability of the higher cerebral centers, the psycho-motor and the psychical, up to the point of their highest resisting power. Tobacco should be dropped, to cut off nicotine empoisonment, the hours of rest and labor carefully regulated, night work discontinued, sleep encouraged, and time be given to rest for brain and mind. Rest is a condition of nerve repair and power, and want of timely rest causes much brain disease and neurasthenia. Depression, insomnia and nervousness must all be removed by proper treatment, and a trained resistance of the nervous system to the disease be brought about. The patient must be kept under treatment until the nervous system becomes vigorous and well poised and adequately recuperated. A strong brain and a well nourished nervous system is the state of physiological antagonism to the disease of dipsomania. Everything that tends to undermine nerve stamina and induce nerve disintegration must be stopped, and recuperative conditions and physical regeneration brought about by all means in our power. We must teach our patient how to build his brain up instead of exhausting it. Inebriety occurring from post-natal causes is a preventable brain and nerve disease. Inebriates should be forbidden marriage, always, both by public opinion and by law, for inebriety will breed its like. We need to stamp out the hereditary descent of organically defective persons. The world needs sound brains and vigorous nervous systems, and

progressive men should work to this end, so that dipsomania and kindred neuropathic diseases may be stamped out and suppressed.

As long, however, as the disease exists, let the unhappy subjects occupy their proper medico-legal relation, which is one of irresponsibility deserving protection.

SUNNYSIDE HOME FOR NERVOUS INVALIDS,
Brooklyn, N. Y.

A PROPOSED MODIFICATION OF PORRO'S OPERATION. *By*
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logical Society.

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MR. PRESIDENT:

I desire to present to the Society this evening a method of procedure in cæsarian section which possibly may in some cases be substituted for Porro's operation.

No operation in surgery has so interested the world as that of cæsarian section. By some, records of it are considered to be as old as written language. Not only has it interested surgeons; it has engaged the attention of legislators and ecclesiastics. Invested with the glamour of superstition and romance it has played a part in history. The progress of the operation may here be briefly outlined. Though so few early authentic records of cases have been handed down to us in the annals of surgery, it is yet certain that in the time of the first systematic writer on obstetrics, the operation was frequently put in practice—Mauriceau says, speaking of his own times, "it is done by

ignorant persons every day in the country," and so great and frequent were the abuses of the operation after his day that a number of the most distinguished surgeons and obstetricians of Europe condemned and opposed it.

Notwithstanding the very great interest with which the cæsarian section had been for so long regarded, the first suggestion as to its improvement seems to have been made by Michaelis, of Marburg, in 1809. He is quoted by Maygrier as recommending that extirpation of the uterus be combined with cæsarian section, to the end that a woman with a pelvis so narrow as to preclude natural birth could not again become pregnant. As cited by Harris, he said, "It is indeed a question whether the cæsarian section would be made less dangerous if with it were combined the extirpation of the uterus."

In 1828, Dr. James Blundell, of London, in his classical midwifery, wrote in his chapter on cæsarian section as follows: "In the hope of unlocking the abdomen for surgical operation, I have myself endeavored to prove that extensive divisions of the peritoneum are not in general followed by fatal results. * * * When I first turned my attention to the profession I used formerly to hear that, like wild fire, an inflammation, commencing in a spot of the peritoneum, might be expected to spread rapidly over its whole surface. That the risk of diffused peritonitis has been greatly exaggerated, I have endeavored to show in a small paper, and from the adverse opinions of my contemporaries on this point I confidently appeal to posterity. In some future age, when our hearts and their petty passions are quiet in the dust, this opinion, whether right or wrong, of great importance to our race in all future ages, will probably be decided by accumulated

experience—may I not add, in the affirmative? to this dijudication I think it better to commit it. * * * In speculative moments I have sometimes felt inclined to persuade myself that the dangers of the cæsarian operation might, perhaps, be considerably diminished by the total removal of the uterus. If the cæsarian section be performed on a rabbit in the ordinary way, unless I am much mistaken, it will be found that the animal generally perishes in consequence. But in four rabbits recently delivered, I made an opening above the symphysis pubis, and raising the womb from the abdomen, I elevated them above the aperture. * * * Having applied my ligatures about the vagina I completely removed the wombs. * * * I (then) drew forward the ligatures till I brought the raw surface, left by the removal of the wombs, in contact with the abdominal incision internally, * * * trusting that this might promptly contract adhesion with the inner surface of the abdomen. Beyond my hopes the operation succeeded; of the four rabbits, three recovered, the fourth dying in consequence of the ligatures slipping from their place. In performing cæsarian delivery on the human body, perhaps this method of operating may hereafter prove an eminent and valuable improvement."

Lately the interest in the cæsarian section has greatly increased. It has been stimulated by the successes in other lines of abdominal surgery. Surgeons, the world over, have been impressed with the possibility of decreasing the fatality of this operation by applying to it the principles which have grown out of Listerism. A hopeful confidence so aroused has led to more frequent and earlier resort to the operation, and has placed it more and more in competition with craniotomy. Interest in it has been greatly enhanced of recent years also by the adoption by surgeons of the method of

operating practiced by Dr. Porro. Dr. Porro some years since, struck by the fatality of cæsarian section, and reflecting upon the cause thereof, conceived the operation which has since borne his name. Many of the unfavorable results of the old operation are to be ascribed in the main to the impossibility of so closing the wound in the uterus, that closure may be maintained. The incision in the womb, the relations of whose walls are constantly changing, could not be stably united by a suture, which would prove insufficient after a few hours, because of changes in the relations between the knotted loops of ligature and the ever altering tissues which they embraced. Dr. Porro cut the Gordian knot of this problem by the removal of the entire body of the uterus,—a procedure which also eliminates the dangers of hæmorrhage from the uterine incision as well as those incident to the open wound presented by the placental site.

In the Porro operation the danger of shock from the ablation of the uterus and of complications arising from the management of the abdominal wound, especially those incident to traction on the pedicle and the presence of a drainage tube, when this is used, are superadded to those of the cæsarian section.

The essential features of Porro's operation are the seizure of the emptied womb by a wire clamp at such point as will admit of retaining the amputated stump within the abdominal wound. The wire ligature is tightened from time to time if bleeding threatens, and is allowed to remain until the projecting uterine tissues on its distal side have lost vitality.

In the hands of some special operators the results of the method have proved most promising; thus in the maternity of Milan, of fourteen women operated upon, eleven were saved.

According to Dr. R. P. Harris, in the *Encyclopedia of Sur-*

gery, "the Porro operation has entirely superseded the old method in most of the lying-in hospitals of Europe, and has reversed their tables of mortality completely. Where for many years every patient died, now at least 50 per cent, and in some hospitals a larger proportion, recover. It is true, anti-septic measures, preparative treatment and early operating have had much to do in effecting this, but there is also a very decided diminution of the death rate to the operation itself. It has failed in Great Britain in nine out of ten cases, but this is due to the subject more than to the operation."

The latest statistics of the Porro operation (Harris) indicate in 151 operations 67 successes, giving 44.3 per cent of recoveries.

More recently, results of the Porro operation, as contrasted with the old method, especially when it was considered that every Porro operation had the advantage of the new modes of wound dressing, have been disappointing.

In the old operation the wound in the uterus under the new order of dressing, instead of being left to nature, has been in more recent cases closed with wire sutures, reinforced by superficial stitches, both so adjusted as to turn in the cut edges of peritoneum and retain the serous surface of one edge apposed to the corresponding surface of the opposite edge in a manner designated as "welting." Some autopsies have shown that this suture, at least in some instances, remained tight, although it has also been noted that the edges of the uterine wound corresponding to the uterine cavity are so drawn upon by the muscular fibre as to suffer eversion and thus present raw surfaces to the action of the uterine contents.

The statistics of more recent cæsarian operations (1874) in 1605 operations give a percentage of recoveries of 54.

In 1884 Prof. Mueller, of Bern, at the International Medical Congress, declared that the question as to which operation offered the better results, the old or the new cæsarian section, could not then be determined, inasmuch as the old method had not as yet been sufficiently tried under the new system of wound management.

Charpentier in his Midwifery says: "The tendency at present is to return to the old cæsarian operation."

The substitute for Porro's operation which I have to propose is as follows: The operation proceeds as in cæsarian section till the child is removed, the actual cautery being used in opening into the womb. Then, instead of dragging the womb out of the abdomen through the abdominal incision it is dragged out of that cavity through the vagina. The operator passes a Well's clamp somewhat modified in its prehensile surfaces and properly curved in coincidence with the parturient canal to the fundus of the uterus and there secures a firm grasp into the uterine tissues. By traction upon these forceps, and pressure, and suitable manipulation from above, the fundus of the uterus is depressed into the body of the organ, and drawn through the cervix into the vagina to produce complete inversion. The clamping wire is immediately adjusted, and excision of the uterus and appendages effected at a suitable distance from the vaginal junction. The abdominal wound is closed, and attention is given to the stump in reference to hæmorrhage as in Porro's operation. In lieu of the clamping forceps in some cases it would answer better, doubtless, to pass a loop of copper wire through the walls of the uterus to be caught upon a suitable instrument, as a rod possessing the flexibility of block tin or solder, passed *per vias naturales* to receive it. The advantages of this

operation over Porro's method which suggest themselves are: *First*, that the abdominal cavity is thoroughly closed; the abdominal incision, not being embarrassed by the presence of the large pedicle, is as perfectly and as quickly closed as in any other laparotomy. By the process of inversion the pedicle is placed outside of the abdominal cavity, while what may be termed the uterine inlet made into the peritoneal sac is closed by the clamping wire opposing serous surface to serous surface, thus offering the best prospect for speedy and certain agglutination and closure. *Second*, the relation of the parts in the suggested procedure are much more natural, and much less strained than in the *status* in which Porro's method leaves them. *Third*, in the event of drainage becoming necessary in the course of treatment, the effecting of an opening for a tube in the plan proposed can be accomplished very much more easily and safely than in Porro's plan, and the tube being introduced, its situation and direction would be the best possible for thorough cleansing of the cavity to be washed.

Serious objections, at first thought, will occur to the mind of every gynæcologist. These will be here stated and subsequently met, as well as may be, by considerations that may be urged in answer to them.

First.—Of all the accidents *post partum* none is generally accredited with so violent a shock to the patient as the very condition which is here made a main feature in a method proposed as conservative. In the old, and in Porro's operation it almost always happens that, either with or without the partial or complete separation of the placenta, the uterus contracts. With such a condition of the uterine walls inversion would prove difficult and sometimes probably impracticable. Hunter

said a contracted uterus was as difficult to invert as a jack-boot. When to these difficulties incident to the first step of the operation are added the shock from clamping and incising the uterus, it would seem that the dangers incident to the method proposed might exceed those of the Porro operation.

Second:—In Porro's operation, as in the old cæsarian section, danger begins from hæmorrhage at the moment of incising the uterus, and in the method proposed this danger would be so much the greater as the time elapsing between the two events, incision and snaring of the pedicle, is longer. In the established operations in at least one-sixth of the cases the placenta has been encountered directly in the line of incision. In such instances the bleeding from the double wounds, uterine and placental, would, in an especial manner, embarrass the operator and endanger the patient.

Third:—It must be remembered that in the great majority of cases in which the operations under consideration are undertaken there exist contractions of the pelvis, which may seriously interfere with the main step of the operation, inversion of the uterus.

Fourth:—Apart from these more serious objections it may be urged against the plan by inversion that dilatation of the os uteri, a *sine qua non* of the method proposed, does not always exist at the time of operation, and that it may not always, or even often, be practicable safely to effect it.

These objections will now be considered seriatim. As to the first, regarding the shock to the system so often reported in association with inversions, it may be stated that associated with inversion also is very generally hæmorrhage, and that to this all-powerful cause of depression may be ascribed much of the shock noticed in cases of inversion. While it must be admitted that in some instances inversion

alone, entirely unassociated with bleeding, seems to have produced great shock, and even death, it may yet have happened that in some of these cases, other injuries, as laceration of the uterus, accompanying the inversion may have been partly responsible for the profound impression observed, and one is the more justified in assuming that this objection may be over estimated, from the fact that in a number of cases carefully observed and reported, inversion has produced no shock whatever, and has in fact been accomplished without the knowledge of either the patient or obstetrician.

Blundell says "it sometimes happens that the patient scarcely sustains a single symptom of serious inconvenience (especially if reduction be speedily effected). It will sometimes happen that not a single pressing symptom shall occur."

Dailliez thinks that it is perhaps less dangerous than is generally supposed. He says "the character of the prognosis depends less on the accidents inherent to introversion than on the circumstances which precede, accompany or follow it. If the contrary opinion prevail it is because the accidents essentially dependent on inversion have not been sufficiently distinguished from those which result from its complications and efforts made to remedy it. Even the hæmorrhage, all other things being equal, is less copious and dangerous than that which sometimes follows delivery in inertia of the uterus without inversion."

Dugé says "death may have occurred from violence and not from the inversion *per se*."

Dr. Crosse, of Norwich, states that of 109 *fatal* cases of inversion 72 (only) perished within a few hours (66 per cent). Dr. Lee reports 52 cases; in 37 of these the uterus was restored in 24 hours, and of these only 5 died.

By reference to veterinary surgery cases may be adduced to show not only that uterine inversion among animals is not *per se* especially dangerous, but that inversion, complicated with accidents in themselves accounted most dangerous, is not necessarily fatal. In such cases reposition alone, unaccompanied with any care for existing uterine lacerations may be followed by perfect and speedy recovery.

A mare was delivered of a colt of about four months naturally.* A few hours afterward the veterinary found the uterus inverted and presenting a laceration of about two inches at its fundus. The hostler having seen the mare making violent efforts to extrude a mass of flesh like an after-birth, pulled upon the body, and in that way the tear had occurred. Reduction was accomplished with difficulty. The animal was fully convalescent on the eighth day, and completely recovered on the fifteenth.

M. Guillaumin was called to a cow which had just calved. The inverted uterus soiled with blood and debris of the placenta lay on the litter. A mass of intestines about a yard long had escaped through a laceration in the vicinity of the neck. The intestine was returned, and without attempting to approximate the edges of the laceration the womb was replaced. At the end of eighteen days the animal had resumed her usual regimen.

The following case was reported by M. Gellé, professor of veterinary surgery at Toulouse. A heifer, after a very laborious parturition, had an inversion of the womb. Reduction was effected two hours afterward. The uterine tissue, red and friable, did not withstand the pressure of the hand; perforation, through which the arm passed, resulted. Notwithstanding this accident reduction was accomplished; one hand

* From J. Rainard.

meanwhile preventing the escape of the intestines. The cow convalesced on the third day, and cure was complete on the tenth.

M. Eleout was called to a cow whose uterus was prolapsed and inverted. The left horn was reduced without difficulty; the right was also on the point of being reduced when the cow, by a sudden movement, thrust the horn of the uterus against the hand of the operator so that it pierced the organ and sank through it half way up the arm; nevertheless, the operator replaced the womb, retaining it in position by inserting a bottle as a pessary. On the fifth day the bottle was removed. On the fifteenth day the cow was in good health.

As to the objection regarding the difficulty of inverting the uterus after contraction, it must be admitted that contraction of the uterus into a firm body would certainly render more difficult the inversion. The facility with which the flaccid uterus may fall into itself like tripe, or a wet bladder or the finger of a glove, certainly contrasts strongly with the difficulties encountered by experts in restoring the inverted uterus, even as early as four hours after labor. In the absence of any experience in the matter of purposely inverting the uterus, it will be necessary in support of the practicability of this feature of the proposed operation to draw upon experience derived from practice in midwifery. A variety of facts may be brought to bear to show the likelihood of success in efforts at inversion which may be in a measure classified thus: Direct facts as to the ease with which it has been accomplished directly after labor;—facts showing the readiness with which from trifling causes inversion may be induced within a few weeks after labor;—facts seeming to show that it may even occur in the virgin uterus, and apparently from

minor causes. Replacement of the uterus after inversion, whether that organ be lax, moderately condensed, or in a state of complete involution, is an act so nearly akin to that of inversion that any facts tending to indicate the facility with which an inverted uterus may be restored to position have a bearing upon the question of the practicability of inverting the uterine tissue. Hence in the category of available facts for our present purpose belong those showing facility, or possibility of reduction of the inverted womb at any stage or condition of inversion. Referring to inversion, Dr. Barnes says: "It may be supposed that the uterine ligaments would offer resistance to obviate spontaneous inversion, and the inference from this assumption would be that inversion must be the consequence of direct violence. But in reality this resistance is easily overcome. During gestation the ligaments become elongated, so as to be easily drawn into the hollow or cup formed by the inverting body of the uterus. The moorings of the fundus are too slack to keep this part up. The connections of the cervix to its ligaments, to the bladder and vagina, hinder the inversion of this part for a time." In this connection the words of Hunter may be cited: "The flaccid uterus is as easily inverted as the finger of a glove." By one writer the feel of it is given as that of a wet bladder, and another author assures us that nothing but the sustaining power of a temporarily devised stem prop would in one case prevent the relaxed fundus from falling down into the os after reduction. Several centuries ago when the practice of the obstetric art was almost exclusively in the hands of midwives, inversion of the uterus was common, and the accident is almost invariably referred by authors to the practice of pulling upon the cord. A practi-

tioner informed Dr. Gooch that he once inverted the uterus by merely putting the cord on the stretch. A number of cases are reported where a short or shortened funis has produced inversion, and others where the weight of the child, when the woman has been delivered standing, has caused the accident. Barnes says "manual expression produced one case that he saw, and other similar instances are reported. "It has been produced by strong pressure on the abdomen." According to Boivin and Dugé, inversion has been produced by instruments employed for the removal of polypi. Baudeloque reports a case which occurred six days after labor; and Byford one which took place five weeks after delivery, from apparently slight causes; and cases are reported by other authors of inversion of the uterus in virgins. Instances are related in which inversion occurred and replacement was effected immediately after labor without suspicion on the part of the patient or attendants that anything unusual had occurred. Baudeloque reduced a recent case in half a minute. In another case in which the uterus had been inverted two hours, he replaced it in two minutes.

Radford reduced an inversion in fifteen minutes, although several days had elapsed since its displacement.

Mr. Charles Cowan reports a case caused 80 hours after labor by the patient's rising suddenly out of bed. Prof. J. Y. Simpson reduced the inversion five or six days after labor, "in a short time with little difficulty." And, instances wherein replacement has been effected as late as one week after labor are on record. Baudeloque recorded one sixteen days after parturition.

The caution given by every teacher of midwifery against the employment of anything like forcible traction on the

cord in efforts to deliver the after-birth, is in itself a strong intimation that the uterus may be readily inverted *post partum*.

Restorations of the inverted uterus years after the accident are now of frequent occurrence. In these restorative efforts the operators, apart from the great disadvantage which chronic continuance of the inversion, and the changes incident to that state presented, labored under the very serious disadvantage of most imperfect counter-pressure, and but little or no power of cervical dilatation. The achievements of gynæcologists in reinverting uteri years after their inversion in the face of these difficulties, furnish a strong presumption that an operator would not be foiled in his efforts to invert the uterus as a step in the procedure recommended, especially as in the circumstances here suggested, the uterus is exposed to manipulations *a tergo*, as well as *a fronte*, so that every facility is presented to the surgeon in his attempts at inversion.

It is to be considered also that many of the cases on record where difficulties in replacing an inverted uterus were extreme, occurred before the discovery of anæsthesia. From statements made rather recently it would appear that the obstetrician of today has at hand means of overcoming the spastic contraction of the uterus *in toto*. For very many years the student of obstetrics has been taught to apply a preparation of belladonna to the cervix in case of rigidity during labor; and, notwithstanding the general incredulity as to the efficacy of the means, it still holds its place with some writers as an efficient agent in these conditions. About 10 years ago (quoting from the half-yearly *Compendium of Medical Sciences*) Dr. E. Fraenkel was led, by the

experiments of Breslau on the effect of the subcutaneous injection of atropine on uterine contraction, to turn his attention to this drug. Having employed it in combination with morphia in many cases, he has come to the following conclusion: In cases of spastic contraction of the uterus, either in the second or third stage of labor, whether the whole or only the part of the uterus is involved, the use of the combined subcutaneous injection of atropine and morphia, followed by the administration of chloroform, is the safest, surest and quickest method for overcoming uterine spasm, and rendering operative interference possible.

Dr. Fraenkel recommends these agents, among other conditions, to abate "violent contraction of the uterus met with during the third stage, due to premature attempts to remove the placenta." This combination recommended by Dr. Fraenkel, injected into the cervix uteri at the proper moment before the operation, might be relied upon to antagonize any excess of contraction of the uterus which experience might show to interfere with the efforts of the operator to invert the uterus.* In regard to the objections having reference to hæmorrhage from the uterine incision it will be observed that in the plan proposed the incision through the uterine walls is made with the cautery. While it is probable that the protecting power

* Fraenkel states that the use of atropia in spastic uterine contractions "got into disrepute through a case published by Spiegelberg, in which the subcutaneous injection of one-fortieth of a grain was followed by dangerous atony of the uterus," and he recommends that the dose do not exceed one-sixty-fourth of a grain. The fact that the one author obtained an excessive action of the medicine, and that the other limits accurately the dose, suggests the power of the agent to bring about the condition of the uterine tissues desired in efforts at inversion. It will be noted that the circumstances under which it is here proposed to use atropia render the degree of atony induced of less consequence than in cases of labor. For, in the case here supposed, the ligature is to take the place of the contraction of uterine fibers in controlling hæmorrhage.

of this agent would guarantee the arrest of the bleeding from the uterine wound for a time under conditions of rest, it must be admitted that, in subjecting these seared edges to the changes of relation incident to the process of inversion, there would be danger of re-opening the vessels and loss of blood. In such a case the assistant managing the thermo-cautery would follow the edges of the wound with the purpose of re-touching bleeding points when practicable. That the actual cautery may arrest the hæmorrhage from the uterine wound, even under circumstances of change in its size, etc., the following fact proves.

Dr. R. W. Felkin witnessed a successful case of cæsarian section by a native operator at Kaeura, Central Africa. From Dr. Breitmann's account it will be seen that the bleeding was staunched by the actual cautery. After the extraction of the child the operator grasped the uterus and compressed it with both hands with all his might. "What bleeding still continued was stopped by the actual cautery, the operator still compressing the uterus until it was firmly contracted. In regard to hæmorrhage in eighty-eight cases cited by Playfair, the particulars of which were carefully noted, severe hæmorrhage occurred in 14, six of which terminated successfully, and in four only could the fatal result be ascribed to the loss of blood. In one of these the source of hæmorrhage is not mentioned, in another it came from a wound in the abdominal wall, and in the other two from the uterine incision being made directly over the placenta. In neither of the two latter was the loss of blood immediately fatal; for it was checked by uterine contraction and only recurred after many hours had elapsed."

Says Baudeloque, and others endorse his statement, "There is little blood discharged from the wound in the uterus when it has been made in the middle of the anterior

part; except the placenta be attached there, and even then the hæmorrhage does not last long, if the uterus contract firmly."

Dr. James Edmunds says, in reporting a successful case of cæsarian section in which the placenta lay in the line of incision, "I now cut into the uterus; on deepening the incision blood gushed rapidly out: I instantaneously plunged the knife completely through the uterus and placenta and thrust two fingers through the wound and removed the placenta. "After careful examination, we estimated the entire loss of blood at about fifteen ounces."

James Whitehead reports in his case of cæsarian operation; "The cut into the uterus was about seven inches long. A small incision was first made with the scalpel and continued with the probe pointed bistoury. The loss of blood amounted to about eight or ten ounces; it issued principally from the placenta while being torn through. There was scarcely an ounce of blood from the divided edges of the uterine parietes."

Robert P. Harris says "hæmorrhage is rarely the cause of death."

As to the objection regarding the occasional wounding of the placenta, it holds, in a much less measure, however, as to Porro's operation as well. In such cases the cautery knife would have to be mainly relied upon as in other instances, where the uterine wound alone is concerned. The placental bleeding would be in some measure controlled by it, and, as aids, the ovariectomy forceps of Sydney Jones as recommended by Fancourt Barnes might be depended upon to assist in restraining the hæmorrhage while the child was being delivered. After the removal of the placenta, bleeding from its site, if profuse, should be combated by the application of the solu-

tion of the perchloride of iron, or by a cautery plate, as experience should show to be preferable. In regard to the third objection having reference to the narrowing of the pelvis and the difficulties in the way of the suggested procedure thereby presented, it may be stated that while narrowing of the pelvis would always prove more or less of a hindrance, yet it must be borne in mind that in the majority of cases of deformed pelvis, however much any given diameter may be shortened, there yet remain spaces to one or the other side of the narrowing line through which the womb might be made to pass by the *vires a fronte et a tergo*. Generally in the process of inversion, as the uterus would be drawn through the superior strait, four thicknesses of the organ would be presented at the conjugate; and in cases of unusual narrowing, difficulty might be experienced in this manœuvre. In extreme contraction of the pelvis, dexterity and ingenuity on the part of the operator might enable him to cause the organ to pass in the process of inversion a very narrow space, possibly no wider than twice the thickness of the uterine parietes. Thus by making the incision, where practicable, near the fundus the fold formed by one lip of the wound and its apposed surface of uterine wall might be made to pass; to be followed by a similar fold of the corresponding edge of the incision.

Stein and Weigand recommend that after the operation of cæsarian section if the uterus does not contract so as to sink into the pelvis, it shall be seized by the whole hand, as in taxis for hernia, and be pressed down into the pelvis. In a narrow brim, this procedure, they think, insures that the uterus once pressed into the pelvic cavity cannot rise out of it again. Spitzbarth makes a similar suggestion. These recommendations of practical men suggest the feasibility of inverting the uterus by adroit manipulation even in cases of marked contraction. It

may as well be stated, however, that the plan of operation here proposed has its limits of practicability as compared to the Porro operation, cases of extreme pelvic obstruction as well as those involving such changes in the parenchyma of the uterus as would render inversion dangerous, if not impracticable, would, of course, not fall in the category of those to which the method here suggested might be applicable.

In regard to the fourth objection as to the hindrance presented by a non-dilated os uteri; it may be said that according to the majority of authorities, the most favorable time for performing cæsarian section is after labor has set in, and should interference be delayed till the os uteri were softened and ripe for dilation in the greater number of cases the delay would not prove injurious to the mother or child.

With the present means of dilating the cervix during labor, it is to be presumed that while an imperfectly dilated os would no infrequently prove a hindrance it would not often be an obstacle in the way of the proposed operation. Barnes may here be cited; speaking of the induction of labor, he says: "By the aid of the water bag the cervix may be expanded sufficiently to admit of delivery within an hour. * * * In cases of placenta prævia we have effected adequate dilatation in half an hour." Dr. Lusk says the rigid cervix can be forcibly dilated to almost any extent by hydrostatic pressure*; and other writers refer to this agent as a means which enables them to set almost the hour of delivery when necessity for forced labor exists.

Dr. Thomas, in his operation for very obstinate cases of inversion, found no difficulty, by means of his peculiar dilator, in dilating the cervix prior to reposition. It may be presumed, therefore, that in cases demanding cæsarian section, if necessary,

* Dr. Lusk gives a caution against the abuse of this power.

dilatation of the os uteri sufficient for inversion could generally be safely effected. As adjuncts to the more decided measures, the hot water douche, and the local hypodermatic use of atropia and morphia might be relied upon.

It may be well here to refer to some details of the operation. It is obvious that in the adjustment of the ligature it would be desirable to make the inversion complete. Experience alone could determine the point of election for placing the constricting wire. All that portion of the neck of the uterus lying after labor below the vaginal attachment would be entirely out of the way of the operation, and it would be likely that the line of junction of this collar of flesh would serve as an index of the proper point for ligation. It will be noted that in the case reported by Boyer, after a number of days the ligature was no longer within reach. It will be borne in mind, as a useful hint, that in the case presently to be cited where ablation of the inverted uterus was made in the bitch, the stump of the organ sprang suddenly inward. These facts are suggestive. They point out the fact that the ligation and abscission is in a manner a liberation of the tissues forcibly drawn out of position by the act of inversion, a liberation greatly tending not only to diminish shock and to relieve discomfort, but also to lessen the liability to any inflammation which extreme dragging upon the pedicle might incite or foster. Attention is called to the fact that where reference has been made by observers to the character of the stump after the cure, it is often spoken of as presenting an appearance very similar to that of the os in the natural state. Where the line of ablation is somewhat above (anatomically) the infra vaginal cervix it is drawn so far upward as to free the cervical collar, and the fibres of this ring reasserting themselves close below the stump and "reconstruct" the os tincæ.

It may be inquired, What would be the relation of the ovaries to the proposed line of ligature in an inverted womb? Several writers refer to the ovaries as resting on the edge of the inverted uterus as if about to fall into the cavity. A specimen from which this statement has been deduced forms the original of one of the standard cuts representing that condition. It is a case of partial, not of complete, inversion. Some authors, as Boivin and Dugé, state that the ovaries are not within the cavity of the uterus. Other writers, as Levret, report cases in which the ovaria were found within the inverted cavity. Schultze states that they are there found, and the cut that accompanies his text so shows these organs. In a number of instances, recent and old, the amputated uterus has been found to contain one or both ovaries. In many cases of chronic inversion the appendages have not been found within the cavity of inversion. A study of the relation of the ovaries after complete inversion of the uterus will lead to an indorsement of the statements of Winckel and Schroeder as correct. Winckel writes, "In puerperal inversion, as a rule, the tubes and ovaries fall into the cavity (of inversion)."

Says Schroeder, "In recent puerperal inversion all of the appendages are in the uterine funnel."

In the records of medicine are not wanting quite a number of cases the history of which teaches that the plan of operation here proposed may not be fatal. Some of these are here appended.

* Obs. 170. Perrachi, in 1837, reports that a midwife, in a case of inversion of the uterus occurring during labor, so

* NOTE. The cases here numbered have been translated from the work of Denucé on Uterine Inversion.

dragged upon the tumor as to pull away the womb. Nevertheless recovery resulted.

Obs. 171. Kuhlbrand, in 1839, refers to a case of inversion in which part of the tumor was pulled away. Recovery followed.

Thomas cites a case, 1842, in which "one child being born, the midwife felt the breech of another, as she supposed. Around it she passed a handkerchief, pulled with all her force, and dragged away uterus and annexæ. The patient recovered."

Obs. 173. A bone-setter, as reported by Breslau, in 1850, violently dragged away the inverted uterus and its appendages. A cure took place in seventeen days. There remained, however, at the upper portion of the vagina, an ileo, or recto-vaginal fistula. Finally, after a time, fecal matters resumed their usual course.

Obs. 175. X—— in 1851. A midwife tore away the uterus and one of the ovaries by violent traction on the placenta. Nevertheless recovery resulted.

Obs. 174. Oldham in 1850 reports that a midwife pulled upon the uterus, inverted it and tore it partly off. She completed the ablation with a bistoury. The woman recovered.

Obs. 172. Rossi reports a similar case. A midwife, by immoderate tractions, detached a great part of the uterus, and finished the operation with a knife. Restoration was very rapid.

Obs. 167, 168. Velpau, in 1836, cites two cases, one related by Viradel, the other by Caille, in which midwives excised inverted uteri. Both cases ended in recovery.

Obs. 164. Bernhard, in 1802, on the authority of Breslau,

relates the experience of a midwife, who, on the occasion of an inversion occurring at the time of labor, cut off the uterus with a razor. The hæmorrhage, which was violent, was arrested by ice. The patient recovered with a rectocele.

Obs. 34. Wrisberg, in 1782, reports the fact that a midwife, in a case of inversion produced by violent tractions on the placenta, had the temerity to resect the womb with a knife. Torrents of blood flowed; hæmorrhage was arrested by syncope. Wrisberg was called two days afterward. He recognized an opening two inches in diameter between the vagina and the abdominal cavity almost closed, however, by the bladder filled with urine. The condition of the woman improved from day to day, and at the end of three months she was able to call upon Wrisberg.

Obs. 163. Osiander, professor at Gottingen, about the year 1800 reports that a midwife, having drawn the womb with the placenta out of the vagina, cut it off at the level of the latter without the ablation proving fatal.

Slevogt, a surgeon of Jena, removed the uterus and fallopian tubes, under the impression that he was merely excising an excrescence; the woman perfectly recovered.

Vieussens removed the uterus for inversion successfully, only a small portion of the womb remaining.

Obs. 110. Clemencen mentions the fact of a complete inversion of the uterus, followed by gangrene, in which recovery took place.

Murray reports a case, says Barnes, where the uterus was found inverted twenty-four hours after spontaneous expulsion of the placenta. It was released, and again found inverted on the following day. On the thirteenth day it sloughed off without hæmorrhage. The patient recovered.

Rousset, 1581, Primrose, and Radford have given cases in which the inverted uterus appears to have sloughed off without compromising the patient's life.

Obs. 32, Faivre, 1767, surgeon of Vesoul, reports as follows: A midwife delivered a young woman, using great violence in delivering the placenta. Finding the uterus inverted she pulled upon it with all her force with no other effect than to increase its volume. A day or two after, the uterus having fallen into gangrene, Faivre applied a ligature. Twenty-seven days thereafter, the patient meanwhile suffering greatly from fever, convulsions, etc., the uterus fell off. After a month of foetid suppuration the wound cicatrized. The woman recovered her strength with astonishing rapidity.

Obs. 169. Cooke, in 1835, relates the following case: A midwife dragged upon an inverted uterus, which she mistook for a second child, and partly detached it. Cooke was then called and applied a ligature above the mutilated portions of the uterus; these he retrenched. The uterus contained the right ovary and the fallopian tubes. The woman recovered, without accident, other than the temporary induration of a breast.

Obs. 201. In Bradley's case, 1874, complete inversion was produced by the midwife's pulling on the cord. Dr. Bradley was called 15 days afterward. The uterus, much inflamed, presented a spot of gangrene as large as a dollar; the pulse was 120, and the countenance hippocratic. Having tied the vaginal arteries he amputated the uterus. In one month the woman was walking about the room. Her recovery was complete.

Obs. 235. Hunter, 1799, on the eighth day after labor applied a ligature to an inverted womb, and six hours later excised the organ, no pain, no bad symptom arose after the operation. The patient left the bed on the 15th day and was well at the end of a month.

Obs. 165. Rottger, in 1820, citing Breslau, reports a case of inversion due to a polypus. A bone-setter excised the tumor piecemeal. This rash operation led to a violent hæmorrhage. Rottger, called in time, succeeded in ligating the uterus and excising the part below the ligature. The woman recovered.

Obs. 166. Weber mentions an inversion due to a polypus. A midwife having pulled away the tumor, gangrene occurred. Weber placed a ligature on the vagina and amputated beyond it on the fifth day. The patient recovered.

Obs. 31. Anselin, surgeon of Amiens, 1764, reports a case in which an inversion of the uterus recurred after primary reduction on the 15th day, forming a tumor as large as an ostrich egg between the thighs. Anselin applied a ligature and seven days afterward amputated the organ. In seven weeks the woman was entirely recovered.

Dr. Cleghorn, of Glasgow, 1810, reports the following case:

"At the end of half an hour after a natural but laborious labor the placenta had not separated. The midwife proceeded to remove it; in doing which she employed so much force that she dragged out the after-birth and uterus together. * * * The patient fainted away; but on her recovery she found there had been a profuse flooding, and that there was a large tumor externally. No attempt was made to return it, and she therefore remained in this situation for three weeks, when with the greatest difficulty she walked to Welshpool, a distance of nearly three miles, where she received medical attendance. The exertion of walking brought on a very violent inflammation of the parts, which during the first fortnight was followed by a great

sloughing of the coats of the uterus, attended by a very fetid ichorous discharge. A fortnight after this time, and about five weeks subsequently to the accident, it was found that reduction of the tumor was become impracticable, and that extirpation was the only chance left for putting an end to the poor woman's sufferings. The whole of the uterus, and at least an inch and a half of the vagina, were excised. The patient in about a fortnight began to improve in her flesh, and in six weeks after the operation she was perfectly recovered."

Several histories of *post partum* accidents occurring in animals which cannot fail to bear upon the questions involved in this paper are here appended. They are extracted from an admirable work published at Lyons in 1850, entitled "*Traité complet de la paturition des principales Femelles Domestiques, par J. Rainard.*"

M. F. Huillet reported the following: A cow calved without accident; two hours afterward inversion occurred. The veterinary proceeded to replace the organ, and when the reduction was partly effected the parts were thrust so rudely outward by violent expulsive efforts that the hand perforated the fundus, and out of the accidental opening there escaped a considerable mass of small intestines. This was the sixth case of the kind which had fallen under the observation of M. F. Huillet and as yet he had never succeeded in remedying the accident by suture. He therefore resolved upon ablation of the viscus which had been perforated. After having carefully returned the intestines through the laceration, which was not less than six or seven inches in extent, he applied a double ligature, reinforced by a circular one, and performed ablation about an inch and a half beyond the ruptured portion. After one month the cow could do her usual work.

A cow experienced after parturition inversion of the uterus. Reduction was effected, four or five hours after the inversion recurred; a second restitution followed, and a second recurrence of the inversion. The uterus, now in a state of congestion, was incapable of replacement because of its increased size. Lotions were applied for three days, when a dog fell upon the mass of flesh with his teeth, tore the mucous membrane in several places and caused a fairly abundant hæmorrhage. Inflammation followed, and on the tenth day all hope of returning the tumor being lost, ablation was decided upon after the following plan: The animal being on her feet and the uterus sustained horizontally by two assistants the veterinary made on the superior wall of the organ an incision about six inches long, traversing the thickness of both walls. Between the margins of this opening he inserted a roll of linen six inches long and four inches in circumference, and by means of a tape two yards long, used as a double headed roller, he applied a series of turns very tightly about the pedicle of the tumor; that is to say about that portion of the uterus embraced by the structure of the neck. The ninth day all that portion of the uterus beyond the ligature was amputated. About this time the cow had regained her appetite, the fever had ceased, and a short time thereafter she was able to work.

In a case of inversion of the uterus in a bitch under the care of M. Cros, a ligature was placed as nearly as possible to the uterine neck. On the third day the strangulated tissue was amputated an inch beyond the ligature. There followed very little loss of blood. From the moment of incision the inverted stump of the uterus withdrew suddenly dragging the ligature. A serous flow appeared on the second day; on the fourth day the ligature came away.

Meanwhile the general health of the animal was not seriously deranged.

"There have been published a number of cases of extirpation of the uterus in the cow, the goat, the sow and the bitch followed by complete recovery. Generally the occasion has been rupture of the organ and escape of the intestines in consequence of the uterus being torn by dogs."

M. Chanel has seen the half of one of the cornua of the womb of a sow expelled from without the abdomen, cut off, together with the two fœtuses therein contained. The other fœtuses of the same cornus continuing to develop to the end of gestation.

Mr. President: In the course of my researches in preparing this paper,* I have looked expectingly for the presentation of the same proposition as I have here made from colaborers in the field of obstetric surgery. I

* After writing this article the writer found in the essay of Dr. Harris on the Porro operation in continental Europe, published in the American Journal of the Medical Sciences, in 1880, the following sentences:

"Several other plans [of treating the cervix] have been proposed. * * * (2) to invert the uterus after its evacuation and constrict and remove it by the vagina. This plan tends to complicate the case and increase its dangers, etc."

Had the writer been aware that the suggestion which forms the basis of the foregoing paper had been previously published he would not have prepared it. Inasmuch, however, as the merits of the method proposed are in no wise affected by its having been previously suggested, he has decided not to withhold the article from publication.

Dr. Harris, in objecting to the plan of leaving the pedicle in the vagina, says: "Suppuration within the vagina is not nearly so safe as it is external to the abdomen, where purulent absorption is much less likely to occur, and especially under the dressing of Lister."

There are reasons to believe that Dr. Harris has an exaggerated idea of the danger from this source, for in 63 cases of removal of the chronically inverted uterus by the form of ligature here recommended, there occurred a mortality of only 15 per cent, and if the cases be eliminated in which the patients died from shock, exhaustion, cancer, etc., the result shows a mortality of only 10 per cent. If it were practicable to eliminate the dangers incident to and inseparable from amputation of the uterus *per se*, the element

have been rather surprised to have met no allusion to the method. The germ of the plan here proposed may however be found in the writings of that brilliant obstetrician to whom, more than any other, suggestions for improvement in the operation of cæsarian section are to be credited, James Blundell. In his article on laceration of the uterus occur these words: "Would extirpation of the uterus, *with or without inversion*, be of service in these cases? This question may be answered next century."

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of mortality to be charged to the presence of the stump in the vagina would certainly be small. If deemed necessary, the pedicle within the vagina might be subjected to constant irrigation.

It has occurred to the writer that, so far as he is aware, in performing the cæsarian operations surgeons have not sufficiently availed themselves of their anatomical knowledge and surgical resources in the direction of controlling hæmorrhage from the uterus.

There would appear to be no reason why this hæmorrhage might not be controlled by two skilled assistants, one on either side of the patient.

The uterine artery, it is thought, could be controlled by pressure with the finger backward, outward and upward on the internal iliac artery. The ovarian artery might be controlled by the thumb pressing it backward against the body of the psoas muscle, about on a line with the bifurcation of the aorta.

Pressure upon the vessels should not be made until the uterine incision begun, nor relaxed till the constriction of the cervix has been effected.

Should this method of restraining hæmorrhage during the operation prove successful, the plan of bringing the cervix inverted into the vagina would be greatly simplified, for the uterus could be ablated at the point of election *in situ*, and then, by traction upon wire loops introduced near the incised edge of the cervix, it could be inverted and the clamping wire adjusted. The dragging of the body of the womb through the pelvis and os uteri could in this way be avoided.

EDITORIAL.

FRANK HASTINGS HAMILTON, M. D., LL. D.

Professor Hamilton died at his residence in New York city, on Wednesday, August 11, after a brief illness of two weeks. For the past two years he had suffered from pulmonary phthisis.

He was born in Wilmington, Vt., September 10, 1813. He entered the Medical Department of the University of Pennsylvania, and graduated when only twenty years old. He successfully held professorships in the Fairfield (N. Y.) Medical School, Geneva (N. Y.) Medical College, and the Medical Department University of Buffalo. He was one of the founders of the Bellevue Hospital Medical College, and occupied the chair of surgery in it until 1875.

During his life, and at the time of his death, he held many important positions. In 1881 he was brought prominently before the lay public as one of the consulting surgeons in the case of President Garfield in his last illness.

Professor Hamilton was not only a brilliant surgeon, but a distinguished writer and teacher. His "Treatise on Fractures and Dislocations" is one of the best books on that subject in existence. The third edition of his "Treatise on the Principles and Practice of Surgery" has just been published.

At the last meeting of the Chicago Medical Society, resolutions of respect and condolence were adopted.

THE NEUROLOGICAL REVIEW.

Professor Jewell has again entered the field of periodical literature, having recently established a new journal called *The Neurological Review*. The distinguished success attained by the *Journal of Nervous and Mental Diseases* while under the same editorial management, leads to a confident anticipation of similar success in the present venture. The three numbers already issued indicate the high place the *Review* will occupy in the field of clinical neurology, and the editor promises still better things for the ensuing year, when the work shall have been better established.

LIGATION OF THE VERTEBRAL ARTERIES IN EPILEPSY.

In another part of this issue is a brief abstract of a paper on the above subject, read by Dr. J. L. Gray before the Chicago Medical Society. Several points raised in that article are of considerable interest. The theory of Alexander (*Brain*, 1882) is, in brief, that the operation was of benefit in modifying the circulation by diminishing the quantity of blood sent to the diseased and hyper-sensitive centers. Dr. Gray, in his paper, says that he regards the very free anastomosis existing in the circle of Willis as sufficient to re-establish the circulation in a short time, while Alexander would lead us to think that the complete dilatation of the posterior communicating arteries may require months or even years. In support of his views, Dr. Gray pertinently observes that no evidence of anæmia is observable in the parts supplied by the arteries, immediately after the operation; and further, that were the benefit entirely due to the

impression made upon the circulation, it would be as great in those cases in which the excitation starts in the cortex and is propagated downward as in those in which it originates in some region outside of the central nervous system ; but this does not seem to be the case.

Professor Jewell regards epilepsy as essentially a disease of the vaso-motor nerves. He has recommended the tying of the vertebrals, on the ground that the vaso-motor nerves of the co-ordinating center of the brain, which accompany the arteries and are intimately blended with their coats, are thereby cut off. Theoretically speaking, in proportion to the degree to which the vaso-motor nerve-supply of the convulsive centers is cut off, ought the operation to be successful. Guided by these considerations, he has recommended that the operations be done as high as practicable.

In Alexander's operations the artery was ligated at the sixth cervical vertebra. He reports twenty-one cases, three of which have remained well for upward of a year. Nine cases bid fair to be classed as recoveries, though sufficient time has not yet elapsed. Eight were greatly improved.

The operation has been performed, in this city seven times, with one death. Of the other six cases, three are reported, though in not very distinct terms, as having been benefited. One received no benefit (cortical epilepsy), and two are so recent that nothing can yet be affirmed as to the result. In all these cases the artery was ligated between the atlas and the axis.

It would seem, from an analysis of the above results, that the so-called high operation has little to recommend it over that first proposed by Dr. Alexander. But as yet it is cred-

ited with too few cases, and such a short time has elapsed since it was recommended, that we are hardly justified in coming to any conclusions as between the two. It may prove necessary to sever the communication between the superior and middle sympathetic cervical ganglia—theoretically it should—practically it seems to make little difference.

Ross states that obstruction of the basilar artery at its inferior extremity causes paralysis of all four extremities and both sides of the face. Simultaneous obstruction of both vertebrals produces exactly the same effect, while in obliteration of one vertebral the symptoms assume a hemiplegic form.

It may readily occur, in obstruction dependent on arterial disease, that the collateral circulation is with difficulty established, and softening and paralysis take place. But just how an embolism—say from the aortic valves—in occluding an artery could cause different symptoms from a ligature applied in the same situation, is not apparent.

We need more light on this subject, and it would seem a fruitful field for experimental pathologists.

SOCIETY REPORTS.

CHICAGO MEDICAL SOCIETY.

Regular Meeting, June 21, 1886.—THE PRESIDENT, E. J. DOERING, M. D., in the chair.

PROFESSOR F. E. WAXHAM read a paper entitled
INTUBATION OF THE LARYNX AS A SUBSTITUTE FOR TRACHEOTOMY, WITH A REPORT OF 83 CASES.*

PROFESSOR D. A. K. STEELE, in opening the discussion, said that of course the principal interest to the surgeon centers in the question of the performance of tracheotomy in croup or diphtheria. He had looked up some of the older statistics, in addition to those given by Dr. Waxham. The French seem to have led the way in the practice of tracheotomy. Trousseau, in 1858, gave the statistics as about 25 per centum of recoveries, and from later reports tracheotomy does not seem to have gained much. Dr. Solis-Cohen, of Philadelphia, in 1883, recorded some 5,000 cases, and his per centum was the same as given twenty-five years before by Trousseau, about one in four. More recent statistics show some improvement in tracheotomy; for example, Dr. Jacobi, of New York, published 1,000 cases, in which he had a little better success, if he remembered correctly, than those reported by Solis-Cohen. A few days ago he saw a report of seventy-seven cases from the Boston City Hospital, with a

* Professor Waxham's paper appeared in full in our August issue, but the discussion was crowded out by want of space.

recovery of twenty cases, about 25 per centum. In Chicago the statistics, as given by Dr. Waxham, are 306 cases with a recovery of about 19 per centum; these are the most recent statistics he had found. Of course, in regard to the report of cases of tracheotomy, we have to bear in mind a very practical point—that is, that the unfavorable cases are not all reported. The majority of physicians who do a few operations and have not a successful result do not record their cases. In New York city, some twelve years ago, a surgeon reported 67 cases with 13 recoveries. He made operations on 100 additional cases before he had another successful one; so there are curious mixtures and changes in the statistics of different operators.

Another point is that a good many surgeons report as successful, cases that recover from the operation, but that die of some other affection or sequelæ, as the case reported by Dr. Waxham dying from albuminuria. All these cases are reported by tracheotomists as recoveries; but they are not recoveries from the diphtheritic croup. These points must be borne in mind. When we sum up, the statistics to-night would show a recovery of 27 per centum, which certainly seems to be a very favorable showing. In addition to these cases reported by Dr. Waxham, Dr. O'Dwyer has of late recorded 25 cases with a recovery of 24 per centum; taking all those cases into consideration, the Chicago record is ahead of the New York record by 3 per centum. In regard to the Boston City Hospital, where they had 25 per centum of recoveries, we should bear in mind that those cases presumably have much better surroundings than we have in Chicago, or in general practice. There they have the best of nursing and immediate attention in case any mishap oc-

curs, which in some cases in private practice might go unnoticed for many hours. With the favorable surroundings so far as the operation and the after-treatment are concerned, the reported recoveries of 25 per centum are as favorable as we could expect.

Intubation is a comparatively new operation, but with the improved tubes—as by enlarging the calibre of them (for a serious defect in the construction of these tubes has been that the lumen was too small)—the percentage of recoveries would be increased. There would be less danger of rolling up the detached pieces of matter, and he thought that expectoration would occur more freely. It is supposed to be necessary to have the tube extend down near to the bifurcation of the trachea, so as to prevent the curling pieces of membrane blocking up the opening, but he thought they were longer than is necessary. The principal obstruction, we know, is at the larynx; the membrane below the trachea is thinner, smaller, and is not likely to curl up in this way. Theoretically the tube should be long, practically it might be shortened, and with the improved tubes we will get still better results.

A point in favor of intubation over tracheotomy is the rapidity with which it can be done, taking only the fraction of a minute to insert a tube in the hands of an experienced operator. We might also take into account the greater comfort of the doctor after the operation; the feeling of security with the laryngeal tube. He is constantly in dread after tracheotomy, watching and waiting, and seeing the little patients upon whom he has operated die one after another. Then the relief from dyspnoea seems to be quite as great after intubation as after tracheotomy. The relief from urgent symptoms is just as marked with the introduction of the laryngeal tube as with tracheotomy. In case we find intubation does not afford per-

manent relief it is no bar to tracheotomy subsequently, although where intubation does not relieve dyspnœa, tracheotomy will not relieve it; where stenosis is not relieved by the introduction of the tube, it does not relieve the dyspnœa.

PROFESSOR W. E. CASSELBERRY said his experience either with intubation or with tracheotomy has not been very extensive, but from it and from what he had gleaned from the literature of the subject, including the valuable paper presented to-night, he was very favorably impressed with the operation of intubation. The most favorable statistics of tracheotomy are those of not only the French, but more particularly of the large hospitals of France and Germany. In these institutions they have the fullest command of the patients in every way; the greatest attention can be paid them and the operation can be and is performed early. The most favorable statistics are those of Plenio (Königsberg)—and of all the cases that were taken to the hospital but five escaped tracheotomy, showing that almost all were subjected to the operation. The case of Dr. Ingals, in which the membrane was removed from one of the bronchial tubes, was a most brilliant one, but then intubation does not prevent tracheotomy from being performed afterwards. The forceps for the removal of the membrane through the mouth, which the author has exhibited this evening, is new; he has not much confidence in it, but perhaps it may be of value. In reference to the length of the tube, somebody has proposed that it should be shorter. He thinks it is the length of the tube which has rendered this operation successful over the operation of some eighteen or twenty years ago. It was invented by a French surgeon at that time, but the tube was only about three-fourths of an inch long, sufficient only to reach into the larynx, where it excited irritation, and the operation was discarded as of no value; so that he thinks in the

length of the tube we have an important feature. In reference to the introduction of the tube, if it is possible to practice on the cadaver it would be of great value; a minute is a long time when you are introducing a tube into the larynx of a child who is suffocating; you gag the mouth, introduce the forefinger as a guide to the larynx, follow it by the tube; the child stops entirely his feeble respiration, in a few seconds he becomes black in the face, and you are very anxious either to get the tube in or your finger out. If we bear in mind the instructions of the author of this paper to pass the tube under and not over the forefinger as a guide, no doubt we will be successful. It should be remembered that the curve into the trachea is a right-angled curve, so you must turn acutely and not obtusely or you will enter the œsophagus and not the trachea. The food of the patient is a most important point; when the tube is in liquids will frequently run into it and excite irritation.

DR. A. B. STRONG said: Before coming here he was prepared to indorse this operation to a great extent. He did not suppose the statistics were so favorable, but he was glad to find they are so. He has had quite a number of cases of intubation and of tracheotomy, and he must say that he much prefers the introduction of the tube. However, not every case is adapted to the intubing. He thinks there are many cases where tracheotomy would be far preferable. We can feed a little patient after tracheotomy much better than after intubation of the larynx; to introduce a stomach tube would require the attendance of the physician several times a day. He has not yet given a fair trial to introducing the food into the rectum. He would not want a little patient that had suffered for three or four days before the operation to go without food. He likes to feed his patients well, and certainly would not wish to starve

them. There are three or four cases that have given him a good deal of information. The operation is new; we do not know all there is about it. One of the first cases that he had of true diphtheria, where intubing was done, was a little boy 4 years of age, taken sick five days before he saw him. The physician in attendance had given the child up, and Dr. Strong was called in. The little fellow was as near dead as any patient he had seen, but he would not have recommended tracheotomy in that case. The neck was badly swollen. The patient was cold, clammy, pulseless and cyanosed, with his pupils widely dilated and apparently just on the verge of dissolution, mainly from profound blood-poisoning. He introduced the appropriate tube, and much to his own surprise he nearly strangled him; indeed, for a moment he thought him dead. He drew the tube out and the child breathed a little better. It occurred to him that he might have crowded the membrane down. He introduced the tube again, with the same result; he was nearly strangled. He tried a smaller tube, but each time the tube went in the child nearly died. He laid him on the bed and surrounded him with dry heat. He gave him brandy hypodermically. He did not suppose the child would live more than an hour, but to his surprise he received a message by telephone that he was alive and doing well, ten hours afterward. He went to see him and found him with a good color, taking considerable nourishment. He called again in six hours just in time to see the child die. He had the privilege of post-mortem, and found exactly the condition of affairs he had anticipated. At the lower portion of the trachea he found a complete cast of that membrane crowded down. This case had been going on about five days when he saw it, and this membrane had been loosened in the meantime and so crowded down.

Another case was of a good deal of interest. A little girl eight years of age had a mild attack of diphtheria four days prior to his seeing her. Two days before he saw her the larynx first became involved, and gradually grew worse. The case was one of the most favorable for operation that he has seen. He introduced the largest sized tube and it remained in position for three days, and within 24 hours the lungs cleared up very nicely; at the end of three days and two hours the tube was removed with comparative ease, and he noticed that the child did not breathe as freely as he supposed she would. He remained about an hour, and during that time dyspnoea set in and the child nearly choked to death. He put in the one next in size and the symptoms were instantly relieved. The child wore that tube two days, when it died from bronchitis.

That case gave him this idea: the tube first introduced was as large as the parts would readily take in—it required a little force to introduce it—and it occurred to him that the tube was larger than was necessary. It remained there three days and two hours, squeezing the blood out from these parts, and when it was removed the sudden reaction caused the œdema of the larynx. The child wore that tube five days and a few hours, and until the last twelve hours of its life was getting along very nicely, except that it did not take the amount of nourishment he considered necessary. This operation is brilliant, and has a future before it, and he can heartily endorse it to-day. He is perfectly willing to try it, and would prefer, in case of one of his own children, intubing the larynx to opening the windpipe.

PROFESSOR CHRISTIAN FENGER said: The subject is a most important one. As to the history of the operation, he would say that it is not a new one. A French surgeon, Loiseau, invented it in 1858, and to him belongs the idea. The instru-

ments were, in the principle, about the same which we use now; there have been modifications in details only. Tubage was tried in France by Gros, but seems not to have found favor, although Bonehut recommended it without having used it himself. It was tried in Vienna by Weinlechner, who recommended it. It was condemned by Steiner and Ziemssen, and given up again. In reference to what was said about patients not swallowing at all for the first twenty-four hours, it seems to him it would be difficult to keep little children from drinking milk, or water perhaps, milk anyway, because they are always thirsty. There will thus be danger from foreign body—pneumonia (Schluck pneumonie). It might be that feeding bottles will obviate that danger. A second point is this: He saw a child treated by intubation die from loosened membranes closing the bifurcation. Whether the membranes were entirely loose or not, or loose above and attached below, is not materially important. The case convinced him that he would have felt safer with tracheotomy, because loosened membranes can be reached easier through the tracheotomy tube than through the larynx. As to the statistics, it is quite certain that the tracheotomy statistics are a little better than have been given here to-night. In the large hospitals in Germany the recoveries reach up, in the last few years, to 31 per cent. At the same time, when intubation shows 27 per cent, that is in itself reason enough for a trial. All these points are not exactly exclusively in favor of intubation, but like Dr. Strong, he should first try the tube, if it was his own child, and watch the patient incessantly, with the tracheotomy instruments on the table to be ready at any time when needed to resort to tracheotomy.

PROFESSOR F. O. STOCKTON was in favor of intubation.

PROFESSOR R. G. BOGUE said that there is much to recom-

• mend intubation he believes. The testimony we get is certainly enough to recommend the operation and to establish it as a practical procedure and one worthy of trial. It affords probably as much relief for the urgent symptoms, the one for which tracheotomy would be resorted to, as tracheotomy would; and the length of time that the tube is to be worn will be shorter than the tracheal tube. These are reasons why it should. From the pressure of the tube upon the membrane the presence would be likely to cause some disintegration of the membrane, and in that way the membrane would be taken away or gotten rid of sooner than without the pressure. The only objection—at least the one which occurs to him from what little he has seen and what we hear—is the matter of fluids passing through the tube into the trachea and into the respiratory passages while attempting to feed the patient. That is an annoyance and probably a detriment. It also, he supposes, will deter children from trying to take fluids. Little children soon learn to avoid things which hurt them, and he should think that it would be a factor in preventing the free feeding of children. Now it may be that the introduction of fluid into the air passages may not be harmful, for as recently as that day he saw in some report from New York the recommendation that in case of tracheotomy, where there is obstruction below the tube, to pour fluid, by teaspoonful, for instance, into the tracheotomy tube, letting it run down into the air passages, for the object of liquefying and softening the membrane and getting rid of it in that way. That, he thinks, is recommended by Dr. George F. Shrady, who had practiced it recently with apparent benefit.

The question of introduction of fluid into the air passage may not be a tangible objection. But we would perhaps prefer to select the kind of fluid we would put into the trachea

instead of milk or beef tea, or anything of that kind. The operation of tracheotomy has been resorted to for a great many years, with varying success by different operators and in different localities. Trousseau years ago reported his success as about one in three, or three to four, from a very large number of cases. In the cases we have heard this evening, as compared one with the other, tracheotomy hardly holds its own. The number of cases in tracheotomy no doubt are not all reported, but a fair proportion of them probably have been reported. While tracheotomy is certainly of great benefit, and has proved itself to be such in this class of diseases, it is subject to its disadvantages and annoyances; but so also has intubation its annoyances, both to the patient, the friends and the doctor.

PROFESSOR C. T. PARKES said he had nothing but words of commendation as far as Dr. Waxham is concerned, for his persistence in presenting this method of O'Dwyer to the profession of this city. He himself has nothing to say about intubation, having had no experience, and never having seen a tube used. He has had a little experience in tracheotomy, and so far as his personal experience goes he will stick to that until he has reason to change it. His experience extends over thirty-one cases of tracheotomy. He had the honor to report to this society on previous occasions the first fifteen cases; eight recovered and seven died. He has collected the names and residence of sixteen more, and of these ten have recovered and six died. That is a pretty fair showing. He cannot explain, and does not pretend to explain this percentage of recoveries. You will find in the literature of tracheotomy throughout the world that some operators have good fortune in that respect. He does not think it an unusual or peculiar fact that the doctor relates about relief given to the patient

when you open the trachea after stenosis ; cases in which the patients are unconscious, black in the face, and are revived by the introduction of the laryngeal tube ; such a result is to be expected. He noticed by the report that very few, if any, of these cases recover after intubation. He knows he has seen just such cases recover after tracheotomy. He has never had any trouble from the swallowing of fluids or food of any kind. He has seen the fluids come out of the opening of the tube, and has had the physician in charge reporting that we had unfortunately made an opening in the œsophagus ; those cases have never given trouble, and in a few days subsided. There is one peculiarity about these cases of intubation, that Dr. Bogue has explained, the pressure of the tube causing an early disappearance of the membrane. There have been no cases that he has seen in tracheotomy where the tube could be removed under six days. In two cases it was three or four months before the tube was removed. He has never seen the trachea opened, so far, without seeing false membrane come out of it. If he were enabled to remove the tracheotomy tube inside of six days or a week, he should think that to be a case in which no membrane was found in the trachea, and one, in all probability, in which if he had waited a few days the patient would have gotten well without any operation. There is something peculiar and interesting in the ages of these sixteen cases, the youngest being $3\frac{1}{2}$, the oldest 37 years of age. He thought the cases in which stenosis has been complete, and required an opening of the trachea, have been very few in the adult. One of his operations was upon a woman after she had been sick some four or five days with a bad case of pharyngeal diphtheria. At the time he saw her she was absolutely suffocating, and he was called for the purpose of performing tracheotomy. He did the operation under very poor sur-

roundings and yet the patient recovered. The tracheal opening became diphtheritic. Another case was 32 years old, and the patient died on the table. This accident has happened in quite a number of cases. He never had any trouble with the children, and certainly expected less with the adults, as in the latter the operation is much more simple than in the child. This patient stopped breathing before the trachea was reached, and after it was opened it was impossible to restore respiration. As far as he is concerned, he can say nothing about intubation. He don't know whether or not it is such an easy thing to intube the larynx. He thinks he has cognizance of three cases not in the doctor's list that proved fatal, in which some difficulty was met. One three years old died the day after. One seven, in which no relief was given, as the membrane seemed to be pushed ahead of the tubes; and one in which, no relief being given, the attempt to remove was complicated by the child swallowing it and being buried with the tube in its stomach. Another, a young lady seventeen years old. This patient recovered; she was relieved immediately after the introduction of the tube, and rested very comfortably until the next day, when she complained of a pain in her stomach. In the evening of that day she passed the tube from the rectum. He allows others to judge of the necessities requiring its use, and so don't know that he can agree with these gentlemen and say the operation is simple. We know what tracheotomy amounts to, and he is sure he would not feel right about it, that he should be haunted with the idea of not having done his whole duty, if he left a child seven years old go without doing tracheotomy where he felt satisfied after this tube was introduced there was no relief given.

He thinks tracheotomy will always have a place. He has been asked many times how he came to have this record of tracheotomy, that he thinks it is due him to say one thing more; he does not know how to explain it. He believes no other operation for tracheotomy should be done but the high operation. The trachea should be opened at the highest ring, and if necessary divide part of the cricoid, as he has done, or all of it. Certainly the after care has a great deal to do with the recovery, and he does not believe there are any persons so wanting in intelligence but if you give them instructions carefully they will carry them out. So far as his experience goes, the surroundings have made no difference, even if it be a house of only one room with the whole family living in it and several other animals besides. He thinks the room should be kept at a temperature above 80; there should be no attempt to fill it with moisture; the room should be so hot as to be decidedly uncomfortable for all the friends for the first twenty-four hours. During this time—twenty-four hours—the inner tube of the trachea should be removed every hour, whether the patient seems to need it or not, because that is the time when the deep-seated trouble in the organs below starts. After that time he does not believe the tube should be removed oftener than seems absolutely necessary, and he does not believe that mucus can be prevented from drying by the introduction of foreign bodies. Every time the tube is removed it should be reintroduced damp, or wet in a mild solution of soda; and occasionally, without taking out the inner tube, drop into the trachea a few drops of this same fluid, so as to keep the end of the tube as moist as possible. No foreign bodies of any kind should be introduced into the trachea after you

are quite certain all the pieces of membrane have been detached and removed at the time of the operation. The introduction of such an innocent little thing as a feather or sponge, he is satisfied, does more harm than good. He is willing to admit that in one case which showed every sign of recovery, the tube was moist and the cough was moist, and he had every reason to believe it would get well, but owing to over-anxiety he kept poking feathers into the trachea and had the friends do the same, until an inflammation of the trachea proper was produced around the tube, which he is satisfied was the cause of the fatal issue. He does not think there should be any interference; the least possible interference is the best.

DR. H. T. BYFORD said he wished to call attention to one fact; that is, in the statistics of hospitals tracheotomy shows about as favorably as intubation, although in private cases the safety, simplicity, and absence of formidableness of intubation makes it already the popular operation. As he has said before this, tracheotomy is an operation for hospital practice, where the difficulties can be overcome, and where its just claims for precedence in particular cases must always obtain consideration.

PROFESSOR F. E. WAXHAM, in closing the discussion, said he believes every tracheotomist will entertain an opinion in regard to tracheotomy according to the success which he has attained. If a physician has saved every patient upon whom he has operated, he will feel that the operation is good enough, and will be perfectly satisfied; if he has saved a large proportion of his cases he will be loth to accept anything new; but the great majority of physicians, who have either met with unvarying failure or inferior success,

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will have a poor opinion of the operation. English writers seem to be losing faith in tracheotomy, for Holmes, in his "System of Surgery," says: "English medical men seem very generally to incline to the opinion that the operation, if not to be recommended, is at least justifiable, but to be successful it must be performed at a very early period of the attack." Referring to Professor Parkes' remarkable record of tracheotomy, he can not help feeling that his cases could not have been so unfavorable. He cannot believe that he had many young infants to operate upon. He would like to ask the age of the youngest patient?

PROFESSOR PARKES: Three and a half years.

PROFESSOR WAXHAM: That explains why his record has been far more successful than that of many physicians, and he believed that if tracheotomy were performed upon every case without reference to age, condition, or type of disease, we would not save more than one out of every ten or twelve. Many physicians select their cases; indeed, he knows of some who *will not* operate upon a child under three years, and of others who will not operate upon diphtheritic cases on account of the known fatality occurring after tracheotomy in these cases.

In regard to the difficulty of performing intubation, he would say that any of you who attempt the operation upon a child without practice upon the cadaver will certainly be sorry for it. He has known of four physicians who have failed completely. In regard to the patient to whom the last speaker referred, the young lady with the tube in her stomach, that case was not in his record, for the patient was not his.

PROFESSOR PARKES has stated that after tracheotomy, if

he were able to remove the tube in less than six days he would have concluded that there could have been no membrane within the larynx, and that if he had waited a few days longer the patients would have recovered without the operation ! A natural inference would be that in these cases of intubation, because the tube has frequently been removed on the third, fourth or sixth day, that there could have been no membrane present and that the operation was unnecessary. In reply he would state that in every case coming under his observation false membrane has been expelled when the tube was introduced. The reason why the laryngeal tube can be removed earlier than the tracheotomy tube is that more or less membrane is detached when the tube is first introduced, and second, the pressure of the tube and the frequent coughing assists in dislodging the membrane; while after tracheotomy little or no air passes through the larynx until after the removal of the tube, and there is nothing to cause the dislodgement of the membrane.

In regard to feeding the patient. Many of his patients have taken abundance of nourishment without difficulty. Occasionally, however, there will be one that will not take a sufficient amount. It will depend a great deal upon the size of the tube. If we use a tube larger than is appropriate for the age of the patient, it will not always fit perfectly into the cavity of the larynx, and consequently the epiglottis will not close accurately over it. In a case such as Dr. Strong has referred to, where the membrane is pushed down ahead of the tube, the trachea forceps would be very useful in removing it.

There are a great many dangers from tracheotomy that are never met with from intubation; but we rarely hear of

them. He had learned of one physician who attempted a tracheotomy on a child four years old. Cutting down hastily he severed large blood-vessels, and losing his head at the sight of the copious hæmorrhage, at once sewed up the wound, while the child, almost with his last breath, wanted to know if they were going to cut him any more. Another physician, in cutting down hastily in order to open the trachea, missed it, and accidentally severed the carotid artery. Indeed, the history of tracheotomy is replete with horrors, but we do not hear of them. In the hands of experienced surgeons, who are cool and collected, the operation may be a simple and safe one; but in the hands of the inexperienced and the nervous, performed, as it frequently is, in the dead of night, it then becomes a formidable, yes, a dangerous procedure. Intubation, on the other hand, can be performed quickly, in a very few seconds, and without the dangers attendant upon tracheotomy.

CHICAGO MEDICAL SOCIETY.

Regular Meeting, July 6th, 1886.—THE PRESIDENT, E. J. DOERING, M. D., in the chair.

PROFESSOR CHARLES T. PARKES reported a case of urinary fistula of twelve years' standing, from gunshot wound of thigh. The track of the bullet had been such that the urine could escape through the wound on the thigh. Several unsuccessful attempts had been made to close the fistula. While examining the bladder with a sound, Professor Parkes discovered a stone. Lithotomy was performed, and now the patient urinates *per urethram*, and the fistula is closing. The calculus

was the size of a pullet's egg, and the nucleus consisted of a piece of bone. Professor Parkes also exhibited a thirty pound multicular ovarian cyst with colloid contents, which had been removed without enlarging the original incision. He also exhibited specimens of hydatids of the abdomen, connected with liver, spleen and intestines. Exploratory operation had been made, but the hydatids were so numerous, large and adherent that they could not be removed. The patient died of exhaustion. One hydatid of the spleen measured twenty-three inches in circumference.

PROFESSOR W. T. BELFIELD said, the case which particularly interested him is the one in which the stone was found in the bladder, and he congratulated Professor Parkes on his discovery of that stone, because the case had been a reproach to surgery for twenty years. He had once seen the patient, who was kind enough to perform for his benefit, and threw a stream some little distance through the fistula in the thigh. Probably the stone was overlooked from the fact that it was situated pretty high up, attached to the upper wall of the bladder. Recently he had a case in which stones weighing two and one-half ounces had been carried by the man for eight years; he had been sounded a number of times, once under chloroform, but with negative result every time. In that case he found one of the stones attached to the fundus of the bladder, the other ensconced behind an enlarged prostate.

PROFESSOR R. G. BOGUE said: The cases presented are of a great deal of interest. Probably the most interesting feature of the case of stone in the bladder was the discovery of the offending body and its removal. The strange paths that bullets take in their course through the body, or a portion of it, were found to be so various by those who have had opportunities for observation during the war. The fact of this bullet passing

into the side of the thigh, wounding the bladder and passing out through the perineum, was not so very strange; but the repair which took place in the track of the bullet, the lodgment of the large fragment of bone, such as we see here, within the bladder where it remained so long a time without giving a great deal of trouble, is somewhat singular. The long experience that the man had in seeking relief, or cure, without avail, and the probably accidental discovery of the real difficulty and its remedy by removal of the stone, renders the case one of a good deal of interest. The case of hydatid cysts is also of much interest. Hydatid cysts are supposed to be comparatively rare, although in hospitals where a great many post-mortems are made they are frequently found. In many instances they give so little trouble during their growth that they are only found upon post-mortem examination as an accidental affair, the liver being the seat of the great proportion of instances of their development. In looking over the first volume of the catalogue of the museum of St. George's Hospital, of London, he found that there are eighteen specimens of hydatid cysts mentioned, one of the lungs in a lad who had had chronic cough for some two years, which subsided after he had expectorated an hydatid cyst. All the other hydatids developed from the liver; one was a case of multiple cyst where a large cyst had developed upon the superior surface of the liver, causing absorption of the diaphragm, entering the thoracic cavity and becoming adherent to the right lung; the abdomen was quite filled with tumors attached to the omentum, the spleen, the kidney, and the under surface of the liver, and some to the peritoneal surfaces. In this case there had been, no doubt, a ruptured cyst, as the young man had fallen while at play, and the accident was followed by severe symptoms of prostration or collapse, with recognized peritonitis, from which he finally

recovered, but afterwards died of erysipelas. The tumors in the abdomen had been diagnosticated some two years previously, but the death was from a cause other than that connected with the growths themselves, and the revelation upon post-mortem was that of extensive hydatid disease, the greater part being connected with the liver. All of the other instances of hydatids were of the abdomen, connected with some portion of the liver, either within the organ or upon its surface, so that in all of these eighteen cases the specimens were from the liver or within the abdomen, having the liver for their primary seat, with the exception of the one in the lung.

PROFESSOR J. S. JEWELL said he had been deeply interested in listening to the cases reported by Professor Parkes, but especially in the case of urinary fistula. He thought in such cases as stone in the bladder, as well as all others, there should be the most thorough and careful investigation. When one undertakes to explore the bladder for stone, cases like this ought to be held in mind. He suspected that in the case in question Professor Parkes was pretty nearly giving up the examination with the sound when he made the last sweep that brought the stone to light. He was impressed with the necessity for more thorough work than is usually given in the matter of diagnosis. He was becoming more careful every day, as a matter of habit and duty. In studying cases, apparently the most simple, one often finds, where we least suspect it, remarkable things. He thought there was too much hap-hazard diagnosis to produce the best work, and this case is an example of it; for, if Professor Parkes could find the stone, others should have done so.

PROFESSOR C. T. PARKES, in closing the discussion, said: Professor Jewell is correct in his supposition that it was by a mere accident that he found this stone. Perhaps he had neg-

lected to say, in regard to the hydatids, that there is no tissue in the body that is free from this parasite; there are only certain places in the body where it is found with the absence of an adventitious sac, but some, especially those found in the brain, are usually cysts with but two layers, the terminal membrane and the external layer. There are many things that seem to refer their formation and development to the circulation of the broad cells through the blood, and there are many things that seem to show that this cannot be possible.

DR. HENRY T. BYFORD read a paper entitled

THE MECHANICAL TREATMENT OF RETROFLEXION OF THE UTERUS.

The means for correction of the retroversion are of four kinds:

1. Those which permanently fix the fundus in front of the pelvic axis;
2. Those which draw or fix the os back of the pelvic axis;
3. Those which place a barrier or obstacle to the forward displacement of the os and cervix;
4. A combination of two or more of these methods.

The fixation of the fundus forward has been done in four principal ways:

1. By the Alexander operation, in shortening the round ligaments. It was suggested by Alquié, recommended by Aran, experimented upon on the cadaver by W. A. Freund, and successfully performed and established as a therapeutic measure by W. Alexander.

2. The stitching of one or both round ligaments to the abdominal walls; as has been done with permanent success by Wm. H. Byford while performing laparotomy for another purpose.

3. The stitching of one or both of the broad ligaments to the abdominal walls; as successfully done by Koeberle and

Schroeder, and perhaps others, during laparotomy for other pathological conditions.

4. The stitcing of the uterus to the abdominal wall, as recommended by Mueller and Tait, and performed by Heywood Smith by an especial laparotomy.

The drawing or holding of the cervix back has been accomplished by uniting the cervix to the posterior vaginal wall by adhesive inflammation or by operation, as recommended by Loewenthal. But the most available method is by the use of pessaries of the Hodge class, such as the Albert Smith, Thomas, Emmett, Hewitt, Hauks, Noegervath, Schroeder, Gehrung, etc., which hang up the cervix posteriorly and drop the fundus forward, and thus supplement or supplant the posterior suspensory ligaments. The modifications of the Priestly instruments, Cutter's, Lazarewitsch's, Thomas's and Scott's, are also useful. H. Marion Sims's new retroversion, Hodge and stem pessary may be classed here, although original in action. Peaslee's, Mayer's, Dumont-Pallier's, the inflated rubber rings and bags, etc., are to be taken out oftener than to be put in.

The cervix may be kept back by lubricated cotton plugs, changed every day, or by pessaries such as the Courty, the Gehrung retroversion and the author's new instrument, which consists of a thick crescent held in front of the cervix by being attached to arms which work on the lever principle. It looks something like a Thomas retroversion pessary bent so as to come in front of the cervix. It has been made to fulfill the following six requirements :

1. To place the uterus in a normal or nearly normal position ;
2. Not to interfere with the natural supports ;

3. To afford an elastic or yielding support ;
4. Not to interfere with the use of a speculum ;
5. Not to interfere with the marital relations ;
6. The patient is able to introduce and remove it.

The Hodge varieties are generally faulty as to requirements 1, 2 and 6.

The patient in most instances has but to introduce the neck and shoulders of the instrument, assume the knee chest position and push it into place. It allows the vagina to collapse, and does not press injuriously upon the uterine supports.

Especial contra-indications to this form of pessary are : tenderness or induration in the vesico-cervical region, decided retroflexion, an insufficient projection of the cervix into the vagina, and an unusually short anterior wall of the vagina.

Especial indications are retroversion with subinvolution after abortion or labor, or with bilateral laceration of the cervix in which the traction of the other forms acts hurtfully, a lax vagina, post cervical tenderness.

In preparing a subinvolted uterus with bilateral laceration and eversion but without retroversion, it is exceedingly useful for lifting the uterus off the pelvic floor. Latero-version may be corrected by raising one shoulder of the instrument.

Dr. Byford also described and illustrated by charts a *new operation for raising the perineum and pelvic floor* in such a manner as to form an obstacle to the forward displacement of the os and cervix, and at the same time strengthen the vaginal connective tissue attachments. The denudations run across the muscular fibres of the levator

ani in such manner as to enable the operator to shorten those fibres and thus lift up the perineum, posterior vaginal wall and pelvic floor, to the greatest possible extent with the smallest loss of tissue. A transverse strip is denuded just posterior to the fourchette or carunculæ, and a narrow triangle with its base at the posterior commissure, or behind it, and apex in the posterior vaginal wall, made to cross it. This makes a sort of star whose angles are sewed up, in the form of a cross, the transverse strip coming together as a transverse line, the triangle in a line at right angles to it and passing up the posterior wall of the vagina. Sometimes the vulval wedge or base of the triangle is entirely left out, and sometimes represented by a nick in the fourchette; and sometimes the apex of the triangle is represented by two lateral strips passing to either side of the rectum, the latter for the purpose of getting at deeper fibres of the levator ani.

The size of the different parts of the figures must be determined by the case, and are usually very small in those who may be expected to bear children afterwards. The denuded areas must sometimes be altered so as to remove cicatrices and repair particular injuries, the principle of the operation being to produce a natural elevation and condition of the parts, instead of constructing an artificial or unnatural body or cicatrix. In cases of unusual difficulty the uterus should be anteverted and the anterior vaginal or cervical wall be united to the posterior vaginal wall where they meet, and the operation for raising the perineum and pelvic floor then performed.

The Fitch and Studley, Schultze's figure eight and sleigh pessaries, the Hurd, Fowler, Fritsch and Woodward are

cited as examples of tractions behind combined with pressure in front of the uterus. Many of them are faulty in that they produce a rigid fixation of the cervix—and such should be avoided. Other combinations are mentioned.

The author recommends the mechanical treatment of retroflexions chiefly as an aid in their treatment, and would especially keep back operative measures as adjunctives, palliatives, last steps or resorts, or as the least among evils.

DR. H. P. MERRIMAN said he had been very much interested in the paper, which he thinks is a valuable one. It seems to deal not merely with the subject of pessaries, but with the various means of support in the case of retroversion. He believes that a great many physicians, when they find a retroversion, without stopping to consider its cause, at once feel that it is necessary to employ a pessary, and in a great majority of instances the use is followed by failure to relieve. We all know that retroversion of the uterus has more than one cause; it is due in a great many cases to pressure from above, to weight within the uterus itself, as in the case of a fibroid tumor; the use of the pessary in these cases is of no value—it is only when there had been a weakening of the supports. In the case of weakened ligaments the pessary is of value as a temporary expedient. When the retroversion is due to a weakened vaginal support, which is true in the great majority of cases, for when we find the perineum ruptured, even partially, we are going to have, sooner or later, a retroversion. We find pessaries valuable in these cases, though, as a rule, we should not depend upon them permanently, because we need to restore the vaginal supports by some kind of operation, such an operation as restoring the perineum and curing a rectocele or cystocele, or by the general operative proced-

ures Doctor Byford has mentioned. He believes that what we need in nearly every case is to examine the vagina and restore it to its proper shape and position. The uterus is retroverted because the vaginal support is gone, the wall of the vagina has become relaxed and is letting down the uterus, and we want to restore that wall of the vagina. If there has been a ruptured perineum, restore the perineum; if there has not been, the uterus, and by keeping it in place for six months or a year regain the support of the rested vagina. This will be done in a little different way from what Dr. Byford has suggested. We have got to fit something to the vagina that will extend the posterior wall and push up the cul-de-sac back of the uterus. We cannot do that where there is tenderness, or where there is a tumor; but where there is not, and it is merely a simple retroversion, then it will be necessary to fit the pessary to the vagina, and have it fit in such a way as to elongate and support the vagina in a natural shape. It always distresses to hear men speak of fitting a pessary to the uterus. He does not believe it should be fitted to the uterus. It should be fitted to the vagina: the object is to restore the vagina to its natural position, and we must choose a pessary especially adapted for that purpose, and it should lie easily in the vagina.

PROFESSOR WILLIAM H. BYFORD said he came here with the determination of not speaking upon this subject to-night, because the scope of the paper is so great that if he were to undertake to comment upon half the points it would take too long. He believes the principles of the paper are correct for the treatment of this form of displacement of the uterus, especially the one of acting upon the cervix. His impression is that in retroversion of the uterus there is stretching of the utero-sacral ligaments until they are relaxed, and we find con-

nected with it relaxation of the vagina, which he thinks is more frequently the consequence than the cause.

DR. FRANKLIN H. MARTIN asked Dr. Byford what advantages he claims for his pessary over the German sleigh pessary? If the fulcrum of this pessary is as indicated in the large diagram, situated at a low point on the posterior vaginal wall, how is he going to get any support for his fulcrum in a case of lacerated perineum? His illustration represents the fulcrum resting very low in the vagina, and it would have no support if the perineum is even partially lacerated.

PROFESSOR T. D. FITCH said: Dr. Merriman thinks supports for the uterus are abused, and he agrees with him in that opinion. They are abused because practitioners do not take the trouble to enlighten themselves with regard to the use of these mechanical supports, but when they get a case that requires a mechanical support they go ahead thoughtlessly to adjust a pessary of the latest device to support a displaced uterus. If from different causes the uterus has become displaced, do not the uterine ligaments become weakened as the result of that displacement? You never have a case of displacement that the uterine supports do not become weakened and relaxed, and can you tone up a muscle or a ligament that is placed upon the stretch to its utmost capacity, by any means, while in this tense condition? It is impossible. We must assist those ligaments to regain their tone by these mechanical supports, relax the ligaments, give them rest, and then by local and general treatment give them tonicity. Having done this, you can remove your artificial supports. He also fully endorses what Dr. Merri-man says with regard to fitting the pessary to the uterus. The pessary should conform to the normal form of the

vagina, and that is why we have to have this flexible material so that we can bend them by heat and make them fit the different shaped vaginae. He does not approve, as a rule, of the principle of leverage. And that is why so many physicians fail in the use of Hodge's pessary; the leverage is too great. The pressure is so great in using this leverage that abrasion occurs, and laceration and cutting through the tissues. Pessaries should never be fitted in such a way as to produce abrasion, laceration or cutting through the tissues. They should not press hard; they should distend the vagina to its normal length, especially, not its normal breadth, and this can be done without much pressure where the uterus is replaced so that the fundus falls forward so as to be in front of the transverse axis of the uterus at the junction of the cervix with the body. If it is thoroughly replaced, then there is not much pressure when the pessary is introduced. It requires little force to hold the cervix back, and he believes in the majority of cases that here is where the general practitioner fails, viz.: in getting the fundus thoroughly forward, and the uterus replaced. Many times it is half raised up and the pessary presses against the body of the uterus so hard that it will imbed its whole thickness in the body of the uterus, producing inflammation.

He has frequently held the sound in the uterus and held the uterus up thoroughly anteverted, or thoroughly at right angles with the vagina, and introduced the pessary over the sound so as to secure thorough replacement of the uterus. He believes in the use of the pessary, not only as a support to the uterus, but as a splint to the vagina; for if the vagina is kept in its normal position the uterus will necessarily be kept in its natural position. The ideal pessary, in his opin-

ion, is the pessary of Hodge. Emmett's pessary will fit more vaginas than Hodge's or Smith's, the latter differing from Hodge's in that its vuval extremity is narrow instead of broad; Hodge's is broad, while Smith's and Emmett's are both narrow at the lower extremity and are supported by the walls of the vagina. Emmett's is much better than Smith's, is much larger, and therefore much less liable to press too hard upon tissues. The pessary of Dr. Byford, which he has introduced to-night, is the form which Professor Fitch has improvised extemporaneously for himself, and used in several cases. He had six cases where the tissues in the posterior vaginal junction were so sensitive that it was impossible to use a Hodge, Smith or Emmitt, and he took the ordinary pessary of Hodge or Smith, and bent it in the form of a Byford pessary, and found he could use it where he could not use the others. There is an objection to placing this pressure upon the anterior surface of the cervix with a firm, unyielding instrument, and he does not believe that Dr. Byford's pessary will entirely remove that difficulty. He has stated in his paper that there is, in a great many cases, an absence of the anterior lip of the cervix uteri; there is not sufficient of it to be received on this instrument and to be held; it slips off and down in front of the instrument. This is not the only objection. He has found that while the pressure is brought upon the anterior surface of the cervix by the edges on his instrument, it so interferes with the circulation that the anterior lip will become swollen and œdematous. In his instrument there is no ring for the cervix to become imprisoned upon; this is certainly a thing much to be desired where there is an ulceration or laceration existing. If the pressure could be

divided between the posterior vaginal junction and the anterior surface of the cervix, the œdema would be much less than where the whole uterus was held up by the pessary. These pessaries, Byford's and his, are certainly very strongly indicated in cases where there is great tenderness in the cul-de-sac. A prolapsed ovary with a retroverted uterus may fall down into the cul-de-sac of Douglass and no pressure can be borne there at all, and in such cases the only pessary that can be used with success is one that brings the pressure to bear upon the anterior surface of the cervix uteri.

PROFESSOR SARAH H. STEVENSON said she would like to ask how to treat cases in which the fundus lies high and in which the pressure upon the surface has no effect whatever. Where the fundus is low there is no difficulty. It is very easy to cure that sort of retroversion, but where the fundus is high she does not know how to treat the case.

DR. HENRY T. BYFORD said, in closing this discussion, he thinks it is wrong to say that pessaries are fitted to the vagina: they may be fitted either to the vagina, uterus, or pelvic floor, or all three. In regard to the bearing of this instrument, it forms almost a semi-circle in which the cervix fits loosely and does not get directly pressed upon. It also makes a good support for a uterus that is not retroverted, but which rests on a pelvic floor. He has a case of bilateral laceration with eversion to the third degree, in which, after this pessary was applied to the extensive ulceration which was due to friction upon the pelvic floor, got well in three weeks. He has a case of fibroid tumor in which the uterus lay directly across the pelvis, the right horn on a level with the cervix, but which is held about straight by this pessary

modified by having one shoulder lifted, thus giving the patient back her former comfort. In regard to Dr. Martin's question—in the case of laceration just mentioned the levator vaginae portion of the levator ani seem ruptured or relaxed, and leaves a large vaginal outlet, and yet a good sized instrument is retained. A large instrument is of course required for a large uterus or a relaxed vagina. You can change the position of the fulcrum by changing the curve of the arms. The sleigh pessary if reversed looks very much like this one with the handle cut off, but it would require a change in the curve of the arms and in the neck before it could be similarly used. This pessary comes the nearest being a perfect representation of one of Professor Fitch's instruments, which he devised before he became sick, but has not exhibited until to-night, and which is a modified Courty's. About the operation, he would like to say that his object in performing it is merely to raise the natural tissues, not to build an artificial support or barrier of fanciful shape; not to remove any more tissue than is absolutely necessary, but to draw the tissues together as much as is possible or desirable. What he has tried to do has been to find the directions of the muscular fibres and shorten them a little, and if they have been torn to reunite them as they were originally. At the same time he has always in mind the gathering up of the loosened connective tissue about the denudation, and sometimes cuts a little deep at certain points in order to cut into it and make a closer union of tissues.

CHICAGO MEDICAL SOCIETY.

Stated Meeting, July 19, 1886.—E. J. DOERING, M. D., President, in the chair.

PROFESSOR D. A. K. STEELE read a paper on

THE DIFFERENTIAL DIAGNOSIS OF SCROTAL TUMORS.

For diagnostic or clinical purposes tumors of the scrotum may be divided into two general classes, viz.: reducible and irreducible—reducible tumors including all herniæ (except strangulated), varicocele, and congenital hydroceles. Irreducible tumors of the scrotum would include all tumors connected with the testicle, all hydroceles (except congenital), and strangulated hernia. Tumors of the tegumentary surface of the scrotum, such as inflammatory œdema, elephantiasis and epithelioma, are usually so characteristic in their history as to offer no special impediments to a correct diagnosis.

Scrotal hernia may be mistaken for:

1. Hydrocele of tunica vaginalis, cord, or encysted hydrocele.
2. Sarcocoele of the testicle, simple, tuberculous, cystic or malignant.
3. Varicocele.
4. Hæmatocele.
5. Bubo.
6. Undescended testis.

In scrotal hernia, as a rule, the tumor is soft and doughy to the touch, light weight, smooth and regular, painless unless inflamed or strangulated, of sudden advent from above downwards, resonant on percussion, fills the inguinal canal,

has cough-impulse, gurgles, is of normal color, opaque, may exist on either side, the spermatic cord is concealed, does not fluctuate, aspiration is negative, bowels may be embarrassed. It can be reduced unless the hernia is strangulated or incarcerated.

1. (a) In hydrocele of the testicle the tumor is ovoid or pyriform, develops slowly from below upward, is firm, tense and elastic, fluctuates, is translucent, dull on percussion; is irreducible; spermatic cord is neither concealed or displaced; the inguinal canal is empty; bowels unaffected; aspiration reveals fluid.

(b) In hydrocele of the cord the difference is that the tumor is circumscribed, encysted, and sometimes reducible, situated usually near the epididymis, but returns after reduction irrespective of position.

(c) In congenital hydrocele the fluid disappears completely within the peritoneal cavity by compression of the tumor for a short time.

2. (a) In sarcocele of the testicle the tumor is usually hard and resistant, heavy, often nodular and irregular; painful; grows slowly; dull or flat on percussion. The inguinal canal is empty; no impulse on coughing; bowels unaffected; irreducible; no auscultatory sounds. Simple sarcocele is chronic orchitis. Both the epididymis and body of the gland are affected. The cord is usually thickened. Abscess of the organ may occur. It is caused usually by an injury followed by inflammatory deposits.

(b) Tubercular sarcocele is met with most frequently in early manhood, and may occur in any constitution; in the strong and robust as well as the weak and cachectic; and although often associated with tubercularization of other or-

gans, it is common enough to find the tuberculous nidus in the epididymis, not as a sequence of gonorrhœal inflammation or some slight injury followed by inflammatory infiltration—as was formerly believed—but as a coincident.* The progress is slow and insidious. The gland at first moderately enlarges with little or no pain, the hypertrophy being especially marked in the globus major. Presently the outline of the tumor becomes craggy or nodulated, and circles around the testicle from behind forward in the form of a crescent. After several months this adventitious tissue exceeds in size the testicle proper, and then it begins to soften at points, and one or more abscesses burst and discharge a thin shreddy pus. The vas deferens is greatly enlarged.

(c) In syphilitic sarcocoele or gummata the history of the patient guides us in the diagnosis. Also we find that the body of the gland is usually the seat of the infiltration which takes place in the connective tissue between the tubuli semiferi, the epididymis undergoing little if any enlargement. The cord and vas deferens are unaffected. There is little or no tenderness, and the peculiar sensation elicited by squeezing a healthy testicle is absent. The tunica albuginea is very greatly thickened. Hydrocele is a frequent complication, and tapping is often required to establish a diagnosis.

Cystic tumors of the testis closely resemble hydrocele, and differ chiefly in being opaque instead of translucent.

* The bacilli tuberculosis which were formerly probably disporting in the blood in a state of innocuous desuetude, now finding a fertile soil in the increased vascularization of the part, proceed to inhabit, multiply and take possession of the part to its ultimate destruction—just as other microbes have an affinity for the epiphysis of long bones where the blood current is sluggish.

Aspiration should be practiced before pronouncing positively upon their character.

Cancer of the testicle primarily invades the body of the gland, and almost invariably assumes the encephaloid form. Most observers doubt the existence of other varieties of malignant disease in this organ. The development of the disease is rapid. The patient has a sensation of weight, pain and dragging in the testis, the scrotum becomes distended, reddish or purplish, and the superficial veins are seen to be enlarged. The skin adheres to the gland, ulceration occurs, fungus protrudes, the inguinal glands are secondarily involved, and the patient by this time presents the characteristic cancerous cachexy.

3. In varicocele the tumor is knotty and irregular, like a bag of worms; bluish in color; most frequent upon the left side; increases in size upon the application of heat; develops gradually; is dull on percussion; fluctuation doubtful; spermatic cord not affected; inguinal canal not involved. No cough-impulse. It reduces spontaneously by any position that favors increased venous return, but returns immediately when the patient stands up, notwithstanding pressure at the ring. There is weight and dragging in the scrotum.

4. In hæmatocele the advent is sudden; usually traumatic in origin; grows from below up if spontaneous; fluctuates until coagulation occurs; is at first soft, and hard after coagula form. It is pyriform in shape; ecchymotic; irreducible; heavy; dull on percussion. The spermatic cord is unaffected, and the inguinal canal empty. There is often pallor and prostration from loss of blood. The bowels are unaffected.

5. Bubo is seldom mistaken for a scrotal tumor, and it is unnecessary to name differential points.

6. An *undescended testicle* is painful, and pressure upon it yields a peculiar sickening sensation. It is found wanting upon the side occupied by the tumor, and the scrotum is imperfectly developed upon the same side. It is sometimes mistaken for a bubonocoele.

PROFESSOR CHRISTIAN FENGER agreed with Professor Steele that gonorrhœa in itself has nothing to do with tuberculosis; that it will not cause local tuberculosis of the epididymis any more than a trauma will cause local tuberculosis anywhere else in the body. When there is tuberculosis in the body somewhere, and consequently tubercle-bacilli in the current of the blood, then it may be that the local inflammation from gonorrhœal epididymitis, just as extravasation of the blood from a trauma, favors the accumulation of tubercle-bacilli in those places. Occasionally local tuberculosis will commence in an inflamed epididymis, but in a large number of these cases of scrotal tuberculosis there has really been no gonorrhœic epididymitis preceding.

PROFESSOR W. T. BELFIELD thought that too much stress had been laid upon the history as a means of differential diagnosis between syphilitic and other enlargements of the testicle; when affirmative, the history is a valuable factor; when negative, the diagnosis must be made without regard to the history. He mentioned a case where there was not only no history of syphilis, but also a nodular enlargement of the epididymis with but slight increase in the size of the testis—features usually characteristic of tuberculosis; yet the patient's age (31) argued so strongly against tuberculosis that it was determined to try syphilitic remedies before proposing excision; the effect was immediate and complete. Primary tuberculosis of the genital organs is evidently an infection

from within—hæmatogenous. The idea of local infection through intercourse with a subject of uterine or ovarian tuberculosis is of course fanciful; indeed, very many of these patients are boys just beyond puberty who rarely have had intercourse. The growth of the tubercle bacilli implies some local or general predisposition of the individual; one factor in this predisposition is evidently found in the conditions developed during the rapid growth of a part. Thus in childhood the epiphyses of long bones frequently afford a nidus for the growth of the parasite, while the rudimentary sexual organs are never affected primarily; but when with puberty the genital organs begin a rapid development, they are especially prone to become the site of the infection.

The tuberculous testicle should be excised, provided the prostate and seminal vesicles are apparently healthy, to remove the chances of further infection. While it is of course possible that there may be other and undiscovered foci of infection in various parts of the body—lymphatic glands, lungs or elsewhere—yet castration not only removes one, perhaps the only tuberculous nidus, but especially diminishes the danger of infection of the prostate and seminal vesicles—a necessarily fatal as well as agonizing affection. Tuberculosis of the lungs is sometimes arrested by proper climatic and hygienic conditions; but tuberculosis of the prostate never, so far as we know, by either hygienic, medical or surgical means.

DR. McARTHUR had little to say in regard to the differential diagnosis. In regard to scrotal tumors there was a point upon which he would like to have light, viz.: whether Dr. Fenger would have the Society believe that tubercular testis is always the result of general tuberculosis; that is, that the tubercular bacilli are brought in the blood to the point where the local

inflammation occurs. He had privately asked Dr. Belfield if such were the case, what would be the advantage of an early removal? He had removed a testicle that happened to be a tubercular one. The man was 35 years of age, in apparently robust health, with no evidence of pulmonary or kidney affection. Dr. McArthur advised the removal of the testicle and performed the operation. On microscopic examination all the characteristics of tubercular testicle were found; within two months and a half the man died of acute tuberculosis.

PROFESSOR CHRISTIAN FENGER said that fifteen years ago nobody would have thought of extirpating a tuberculous testicle, because we knew that after the abscess has opened and discharged for a long time, such persons, if put under favorable circumstances, given cod-liver oil, sent to the seashore or country, will recover. So far as general tuberculosis resulting from a tuberculous testicle was concerned, only about 25 per centum of the patients, he thought, would become subject to general tuberculosis. In cases where the miliary tubercles were limited to the testicle, and all other parts of the body not as yet invaded, extirpation should be performed. It is a legitimate operation now, but has only become so within the last five years. It of course has to be limited to cases where, so far as we can find out, the tubercle is local in the epididymis. If the tuberculosis has invaded the vas deferens, it is difficult to see what good extirpation of the testicle could do except as a mere local measure. Another point in tuberculosis of the testicle makes us desire if possible to eradicate the local tuberculosis and thereby perhaps prevent the tuberculosis affecting the bladder. The patients are subject to most terrible suffering for a year or two before death when they get tuberculosis of the bladder. He did not think tuberculosis could be called local here except if it could be transmitted

by cohabitation with a woman having tubercles of the uterus, much in the same way as the microbes of gonorrhœa are transferred, and this mode of infection is not proved as yet. The tubercles in the epididymis] must originate in the same way as local tuberculosis in the bones, by arresting any accumulation of tubercle bacilli already preëxisting in the general circulation. He did not think it possible that, in the strict sense of the word, any of these tubercles could be called local.

PROFESSOR G. C. PAOLI did not claim to be a specialist, but had seen many tumors of the testicles and scrotum. Tumors of the scrotum often arise in connection with diseases of the prostate glands, and with strictures. He had seen tumors of the testicle produced by affections of these organs. Another thing that gives trouble in practice is neuralgia of the testicles, which is very difficult to diagnose because the only symptom we have is the severe pain in the testicle. Another kind of tumor which has not been mentioned is scirrhou, and it is often difficult of diagnosis. Many that have been diagnosed as scirrhou have been nothing but chronic orchitis. He once saw a testicle extirpated in the belief that it was scirrhou, but it proved to be a case of chronic inflammation of the testicle.

DR. J. L. GRAY read a paper on

LIGATION OF THE VERTEBRAL ARTERIES IN EPILEPSY.

He said: The ligation of the large vessels furnishing blood to the brain, for the specific purpose of relieving epilepsy, was first proposed in 1831, he believed by a Dr. Brown, of Calcutta, though, it has been stated, that prior to that date, the operation was performed successfully in this country by a surgeon upon his colored servant.

The operation for ligating the vertebral arteries to control

epileptic seizures was first advised by Dr. Wm. Alexander, of Liverpool.

The vertebral arteries, with their branches, furnish the blood supply of the medulla, pons, cerebellum and posterior third of the cerebrum, while the carotids furnish the blood supply for the anterior two-thirds of the cerebrum.

The relation between the sympathetic nerves and vertebral artery is very close indeed, and during its course through the transverse processes of the vertebræ, the artery is surrounded so closely by fibres of the sympathetic that they cannot be isolated without injury to its coats.

It seems to be generally admitted that the real seat of local disease in epilepsy is in the great group of centres in the medulla, more especially the vaso-motor centres and the regions closely related thereto, as, for example, the convulsive centre pointed out by Nothnagel.

The morbid excitations which arouse these centres to unhealthy action must come from regions outside the centres themselves; that is, the local disease may be present for years, and yet no fit occur, provided stimuli of sufficient intensity to rouse the centres to unhealthy action are prevented from reaching them.

In the vast majority of cases of epilepsy, the excitations which give rise to the attack start in some part of the digestive tract from the mouth down, or in the genito-urinary apparatus. These excitations are propagated through the sympathetic up into the medulla, there to excite to unhealthy action the abnormally irritable centres situated in its depths. Excitations may come from other regions of the body, as, for example, from the brain itself.

There are two theories which have been advocated in support of the benefit to be derived from ligating the vertebral

arteries for the relief of epilepsy. The one which was first proposed, is that held by Alexander. In brief, his theory is, that the operation is of benefit in modifying the circulation by diminishing the quantity of blood sent to the diseased and hyper-sensitive centres.

There are several objections to the adoption of this theory of the modification of the blood supply to the parts of the brain and central nervous system in which the disease is.

After ligation of both vertebrals, the part of the brain which had been supplied with blood by these arteries receives its blood supply from the carotids through the posterior communicating arteries of the circle of Willis. It is probable that, within a very short time, these communicating arteries dilate to such an extent as to allow of nearly as great a blood supply to the posterior third of the cerebrum as it received before the ligation of the arteries. It does not, as Alexander leads us to suppose, take months or years to have the collateral circulation established. If this were the case, we should observe those symptoms which accompany cerebral anæmia; but no evidence of anæmia is observable immediately after the operation.

If the benefit derived be due to diminishing the blood supply to the brain, the operation ought to prove of as great benefit in those cases where the excitation starts in the cortex and is propagated downward into the medulla as in those cases where the excitation arises in some region outside the central nervous system,—say in the digestive tract. But such is not the case. Thus far, it is believed, the operation has proved of no benefit whatever in those cases of epilepsy due to cortical disease of the brain, or where the attack is produced by strong emotional excitement of any kind.

The second theory is that proposed by Dr. Jewell: that

the operation is of benefit not merely in diminishing the blood supply to the parts in question, but in preventing morbid excitations from below reaching the medulla by way of the sympathetic, the fibres of which are included in the ligature around the vertebral.

The question as to the best place to ligate the artery is not an unimportant one. Dr. Alexander has operated at the sixth cervical vertebra.

If the artery is ligated at this point the communication between the middle and superior cervical ganglion of the sympathetic and the medulla is not severed. This allows morbid excitations to reach the medulla through the carotid and cavernous plexuses and the pneumogastriks.

The high operation, so called, between the axis and atlas, seems to be the preferable one if we wish to sever, in the most complete manner, communication through the sympathetic between the peripheral nervous system and the excitable centres in the medulla.

Dr. Alexander has reported twenty-one cases, three have been quite well for nearly a year, nine others so free from fits for such a period of time that it may be said a cure would result, and eight are improved to such an extent that the operation is justified were no better results ever obtained. One case, a little girl, died from septic poisoning.

In Chicago the operation has been performed seven times. One case cured, one improved, one no improvement, one died, and in the three other cases time enough has not elapsed since the operation to give any report.

The operation thus far has not in this country been performed a sufficient number of times to allow any sound conclusions to be drawn. The reports of Dr. Alexander are certainly encouraging, giving, as they do, the results in the

most intractable cases possible to imagine. From all the evidence at hand, we seem to be justified in drawing the following conclusions:

1. Ligation of the vertebral arteries should take its place as a recognized procedure in the treatment of certain cases of epilepsy.
2. The operation should be confined to those cases in which the exciting causes of the attacks come from some region outside the brain.
3. The arteries should be tied as high up as practicable, and the ligature should include all the fibres of the sympathetic accompanying the vessel.
4. Where the side of the brain which is first invaded by the disease can be determined, the artery of that side should be ligated.
5. Where the invasion of the disease is apparently bilateral, both vertebrals should be ligated.
6. This operation should not be done as a substitute, but as an aid to other forms of treatment for the relief or cure of epilepsy.

PROFESSOR D. R. BROWER, in opening the discussion, thanked Dr. Gray for his very able paper so full of interest and scientific importance, and said the case which he reported to the State Medical Society two years ago is now not quite so favorable. Indeed the child has practically relapsed into the same condition she was in at the time of the operation. For two or three months the change for the better in the child's condition was very manifest. In that case the ligation was made at one side. The intention was to have both arteries ligated, but such symptoms of collapse came on that it was deemed unwise to pursue the operation further, and there being so little benefit, the parents refused to have another operation. He thought with Dr. Gray

that enough is before us favorable to the operation to recommend it in cases where everything else fails, and he would be disposed to press the operation in those cases where there seems to be some special disorder of the circulation of the medulla. He thought the trouble about the treatment of epilepsy is that we have included under this name a great many diseases. He was sure there are a great many kinds of epilepsy, and he thought we do not know how to differentiate these different kinds, therefore our treatment must be to a great extent imperfect. There seem to be cases of epilepsy that are confined to the medulla. The history of some cases led him to suppose that the medulla is the seat of the disease, and in such cases it seems that the operation might prove a benefit. He did not believe that the circulation is established throughout the circle of Willis nearly so rapidly as Dr. Gray would have us believe. The circle of Willis is made up of minute arteries. In this particular case, there was a manifest and profound impression made upon the area of distribution of the vertebral artery for weeks, and he did not believe the collateral circulation was speedily established. He had no doubt that this operation would do good in some cases, just as any other profound impression will if made upon the nervous system; the cutting and destruction of the connections through the various plexuses is beneficial, so is any extensive counter irritation. A seton added to other treatment that was only partially successful sometimes caused a wonderfully better result to follow. He had a case under observation in which the removal of a cicatrix has resulted in wonderful improvement in the patient's condition, whether due to the extensive counter irritation produced by the operation or removal of cicatrix he did not know. He believed the operation justifiable in cases that resisted the ordinary treatment. He was an earnest advocate of

the surgical treatment of epilepsy, the best results he had seen in this disease having followed the use of the surgeon's knife. Quite a number of cases had come under his observation in which the cause of the affection seemed to be in the ovarian region, and surgical interference was followed by better results than from treatment by medicine. He thought the treatment of epilepsy by pills and powders one of the most unsatisfactory things that can be undertaken, and the proportion of cases benefited by drugs exceedingly small.

PROFESSOR CHRISTIAN FENGER asked as to Alexander's operation, whether he ligated at once on both sides. The first time Professor Fenger ligated an artery the question presented itself if it would not be dangerous to ligate them both at the same time. He ligated the arteries at Dr. Jewell's request and consequently did not take responsibility for ligating both at once. That question of course presents itself, and is truly interesting to see that the double simultaneous ligation of the vertebral arteries has never given rise to local brain symptoms. On the other hand, when we ligate a common carotid in case of epilepsy, we always have in mind the danger which may exist of emollition, from local cerebral enemia, and possibly death in a certain number of cases. The operation on the vertebral arteries is far preferable to the ligation of the carotid, if it should prove that there is no danger by the ligation of the vessels both at one time. As to the manner of operating: Alexander operated down low before the artery enters the vertebral canal, but according to Dr. Jewell's view it is necessary to ligate the vertebral arteries high up. He looked over the books of surgery and found that the method of ligating between the occiput and the atlas, and between the latter and the epistrophe, had been done on the cadaver, but not on living subjects. The reason why the vertebral artery had been ligated in former

times was either for aneurism or wounds. There are very few instances on record, and the wounds and aneurisms were very dangerous cases, and Fischer in the German surgery of Billroth and Lurcke, published in 1880, said that the ligature of the vertebral artery between the occiput and atlas and between the atlas and the axis is practically impossible. On the cadaver it can be done as well between the occiput and atlas as the atlas and axis, but the operation is much easier between the atlas and axis. To ligate between the occiput and the atlas Professor Fenger considers almost practically impossible on the living subject. The ligature between the atlas and the axis can be done. He knew that Andrews ligated there, but the cases on record are few. There has not as yet been any injury to the artery, but if we should tear the artery so that we could not get hold of vessel enough to ligate above and below, we would have much the same condition as in a traumatic aneurism of the artery. Warren, of Boston, who wrote his *Memoirs of Surgery* twenty years ago, gives one case of wounded artery that got well by compression, by filling up the wound, but in most cases we know how little effective the plugging of an arterial wound is. Of thirty-four wounds of the vertebral artery only five recovered. Four of these were treated by plugging or local applications; in one only the ligature between occiput and atlas was performed by him in 1881 and the case published in *Gaillard's Journal*, July 1882. He was afraid when taking up the vertebral artery of the possibility of wounding it before it is ligated.

DR. C. W. PURDY asked Dr. Gray whether the operation was followed by diabetes, as would be expected from an operation of that kind. It was pointed out in 1849 by Claude Bernard, that traumatic injuries to this tract of the brain gives rise to diabetes in numerous instances, and since that time the

course of the diabetic influence has been pretty satisfactorily mapped out. It is said to leave the brain by vaso-motor filaments with the vertebral arteries going as far as the third cervical ganglion, passing along with and surrounding the subclavian arteries, and reaching the upper and middle dorsal. A section of these nerves at any place until we reach the upper dorsal ganglion causes diabetes. Strange to say, section of the splanchnics does not cause diabetes, but we would expect to find traumatic diabetes as a result of this operation. He thought that diabetes as a result of the operation would be only temporary.

DR. HAROLD N. MOYER thanked Dr. Gray for the manner in which he had presented the subject, and especially for the indications which he laid down for the operation. Dr. Moyer had uniformly bad results from the treatment of epilepsy by any operative procedure. He had never recommended an operation for trephining that was followed by good results. He had once recommended the removal of the ovaries, and it was done, but was not followed by a good result. In one case coming under his observation a man was trephined three times; the first time it was followed by a cessation of the epilepsy for eighteen months; the second, for a year; the last by no cessation. He had found medication quite as bad; he had tried the bromides according to Hammond's method, without good results. During the last two years he had treated about one hundred cases of epilepsy and in only one case had there been any real benefit. He thought he should recommend this operation, and hoped it might not be as serious as one would be led to suppose from the deep seat of the artery, and the extensive destruction of tissue that must be made to reach it.

PROFESSOR D. R. BROWER said that at the discussion which

followed his paper at Springfield, a gentleman present announced that this operation was first performed in this country sixty years ago by an army surgeon, stationed in St. Louis, upon a negro man who was his servant. The man recovered, but the case was never published. If this is so, an American surgeon was the first to essay the operation.

DR. J. L. GRAY, in closing the discussion, said that he had not had an opportunity, except in one case, to examine the urine, and in that there was a slight quantity of sugar for about a week. From all the literature he was able to examine the first operation was performed in 1831 by Dr. Brown.

CHICAGO MEDICAL SOCIETY.

Regular Meeting, August 2, 1886.—THE PRESIDENT, E. J. DOERING, M. D., in the chair.

DR. L. L. McARTHUR, read a paper on

DIAGNOSIS AND TREATMENT OF HEPATIC ABSCESS,
which appears in another part of the *Journal and Examiner*.

DR. FRANK BILLINGS upon invitation said he thought that probably he had had less experience with living patients with abscess of the liver than any one present, and consequently had less that is practical to say about it. While in Vienna he saw a great number of autopsies of abscesses of the liver. Several cases occurred in the wards, but no diagnosis of abscess was made, the patients suffering from what appeared to be intermittent fever, and usually a diagnosis of that kind was made. A curious thing to him was the fact that a great number of these abscesses were found in new-born children. In Vienna, one often sees in the dead-house abscesses which were the re-

sult of badly attended cord. Pus had formed in the vein and the inflammation spread upward, finally producing abscess in the liver.

PROFESSOR H. A. JOHNSON said, that while listening to this paper, a somewhat unusual case was recalled to his mind which occurred at the county hospital when it was located on eighteenth street. It was a case of abscess in the left lobe of the liver which had communicated, evidently some time before death, with the left lung, and was discharged through the bronchus; when the case came into the hospital it presented all the signs of empyema and the complication of the abscess with the liver was only discovered in the dead-house. Another case occurred to him in which there was abscess in the right lobe of the liver discharging through the right lung. The patient recovered, but five or six years afterwards a recurrence of the abscess took place, and it discharged into the vena cava, producing instant death. Post-mortem revealed the cavity of the abscess communicating with the vena cava. Both of these cases seemed to him to be somewhat out of the ordinary history of abscesses of the liver.

DR. J. J. M. ANGEAR said, that in all cases that he had seen the discharge had a fearful odor, and he began to think that if the pus did not have that odor, he should have doubts of its being an abscess of the liver.

DR. J. A. ROBISON said that he had just had in the county hospital a case of abscess of the liver in which the diagnosis was made only after death. The remark of Dr. Billings, that abscess of the liver is often diagnosticated as malaria, led him to speak of it. The case was that of a woman who had been ill for several months. When he first saw her in the hospital about a month ago, she was greatly emaciated, jaundiced, and complaining a great deal

of pain in the hypogastric region. The liver was not enlarged, her temperature ranged from 100° F. to 102° F., she had chills every few days, and it was supposed they were due to malaria. She finally died of exhaustion.

There was no diarrhœa, but there was great tenderness over the hypogastric region, together with general jaundice. There was also a cachectic appearance which led him to believe there might be catarrhal inflammation of the duodenum, which would account for the jaundice. But upon post-mortem examination it was found to be a case of multiple abscesses of the liver, with purulent inflammation of the gall ducts. He had in the same hospital another case in which nearly all the signs, of which Dr. McArthur has spoken here, occurred. The patient was a woman about 40 years of age, in whom the area of liver-dulness was greatly increased. Her temperature was 100° F., she was extremely jaundiced, and when she first came into the hospital he heard the friction sound as mentioned in the paper, but that has again disappeared. He believed the case would prove to be one of large abscess of the liver.

DR. JOHN BARTLETT said that at the time of the Mexican War, many of the soldiers returned affected with chronic diarrhœa. In seven of these cases which came under his observation, enormous abscesses of the liver followed. They were not opened, but were particularly examined in the dead-room, some of them containing at least a gallon of pus. As a general rule the patients lived for months. About a year ago he was called to see a case in consultation. The man had been trodden upon in a crowd and received a slight injury about the epigastrium. Inflammation followed and abscess of the liver was diagnosticated, but owing to a difference of

opinion among the consultants no effort was made even to aspirate. After death, which followed in due course, multiple abscesses were found, one as large as a small cocoanut, another as large as an orange, and fifty other smaller ones. He mentioned this to prove how hopeless would have been an attempt to improve the condition of this man by aspiration. He saw another case of some interest: The man was shot and some weeks afterward died. The body was opened and a piece of wadding and the bullet were found in the liver. The abscess was about as large as two fists and opened into the vena porta. In another case he was called in consultation to see a man who appeared to have an affection of the liver. Both of the attending physicians thought it was a case of abscess. Presently he had symptoms indicating that there was some difficulty in the respiratory organs, and later, but in time to act if they had been more prompt, they discovered that there was a retropharyngeal abscess. He immediately expressed the opinion that the abscess in the liver had opened into the anterior mediastinum. He deemed it inexpedient to open this abscess without having other instruments than they had with them. They went to get others and when they returned they were advised at the gate that man had been taken with a difficulty of breathing which simulated croup and had immediately expired. Upon examination they found that he had been drowned, as it were, by the pus from the bursting of this large abscess.

DR. H. N. MOYER asked Dr. MacArthur if in the literature on the subject he had seen anything in reference to the presence of peptone in the urine in these cases? Jaffey has laid down indications of diagnostic value when this substance is formed. He thought the symptoms might lead to the de-

velopment of this substance in the urine, and that it might be of some diagnostic value, in suspected cases of abscess of the liver.

DR. MACARTHUR said, in closing the discussion, he was interested to learn of another source of abscess of the liver to be by infection from the umbilical cord as related by Dr. Billings. Dr. Johnson's case of abscess of the liver breaking into the left pleura and left lung is the only one of which he had known. Rupture into the vena cava is also rare. To Dr. Angear he would say that in the cases he saw the discharge was odorless, and he had emphasized that fact in the paper because the books all state that as a rule it possesses a very offensive odor, and is usually of a purulent character. In two of the cases which he saw it was of a chocolate color being mixed with blood and liver-tissue. Dr. Robison had spoken of a case as markedly jaundiced. This is set down as an exceedingly rare complication in abscess of the liver. He said that in that case the liver was found, post-mortem, to contain multiple abscesses. He desired to ask if the cause was found? Dr. Robison replied that none was found. He also wished to ask Dr. Bartlett if his case proved to be a case of abscess of liver with a mediastinal opening? Dr. Bartlett said that they presumed it to be hepatic, but no post-mortem was allowed. As to peptone, he had seen no literature on the subject in connection with the liver. In those cases in which he used the hypodermic needle to make a diagnosis, three in number, two were operated on and recovered, the third was treated by the expectant treatment and died. No careful search was made for the puncture of the needle in the abscess of

the liver. After the first two cases he became bold in the use of the hypodermic needle and punctured for the fourth time in one case before he obtained purulent matter.

DR. SCOTT HELM read a paper entitled

A SUBCUTANEOUS METHOD OF THE TREATMENT OF BUBOES,
WITH EXHIBITION OF THE INJECTING INSTRUMENT.

This paper appears in full in another part of the *Journal and Examiner*.

His method consists in injecting the suppurating gland, after the pus has been withdrawn, a solution of carbolic acid to wash out the cavity, and then injecting and allowing to remain an emulsion of iodol in pure oleic acid. The injecting instrument consists of a barrel holding two drams, which is mounted on either side by two rings for the fore and middle fingers, and a ring in the end of the piston for the thumb. Three needles, two different sizes of aspirator needles, and one a canula with trocar. To these is attached the center joint, in which is a stopcock, the opposite extremity of which is attached by a smooth joint to the barrel. In twenty-three cases the treatment was successful in all but the nineteenth, this patient having gone on a protracted spree following the operation. The advantages of the operation on that when there are two or more suppurating buboes in the same chain of lymphatics, the second or third appear further away from the initial one; by placing the first glandular abscess in a perfectly aseptic condition you prevent the inflammations of neighboring glands; secondly, there is no cicatrix remaining.

DR. J. ZEISLER said that if conservative surgery has any place he thinks it is in the treatment of buboes, and he thinks the final bad result of treating buboes by section might be

avoided by carrying out the idea of Dr. Helm. It is a good idea to inject iodol, as it may be regarded as a specific against the venereal poisons, and there can be hardly a doubt that the suppuration is due generally to the poisons. He would like to know if Dr. MacArthur had found it sufficient to introduce this iodol emulsion more than once?

PROFESSOR G. C. PAOLI said that in the treatment of buboes of course the sooner we get out the pus the better. but those who have had experience with the treatment of buboes know that there are cases in which, in spite of aspirations and subcutaneous injections, there is still a morbid process going on which produces mischief and ulceration of the tissues. He never uses carbolic acid, but he has used a watery solution of permanganate of potash one-half grain to six ounces, injecting it into the cavity. But we all know that we have cases of buboes which, in spite of all the skill of the physician, produce great suffering. He had seen a case where the femoral artery had to be ligated. In temperate persons we have very tedious buboes. Again, where mercury has been used too freely there are often mischievous buboes. Very difficult cases are those in business men who are busy, active, and produce more congestion of the abscesses by their activity. But if we can get the patient to go to bed and rest we succeed better in our treatment. However he thinks favorably of the subcutaneous method.

DR. FRANK asked Dr. Helm how many of these buboes were due to gonorrhœa and how many to chancres or chancroids, if any?

DR. H. N. PIERCE said he had had an opportunity of seeing Dr. Agnew, Jr., four years ago, experiment with the subcutaneous treatment of buboes. He first evacuated the pus by use

of the canula, then injected an antiseptic solution, washing it out and afterward applying a compress bandage. The buboes generally went on from bad to worse, and he tried the same method over again but with no success, and finally he had to cut down upon them and treat them by the old method.

DR. HELM, in closing the discussion, said that he had made, in any case, only one injection, and the time that elapsed before the patient was discharged had been from eight to fourteen days. In reply to Dr. Feder he would say that these buboes had been aspirated as early as possible, as soon as there was fluctuation. All the pus was removed and the cavity injected with a like quantity of the oleic acid emulsion of iodoform. He had no case in which there had been a return of the disease in the same chain of glands. He had one case in which there was a bubo appeared some two weeks afterward in the opposite groin, evidently due to gonorrhœa. In the second case, and the last one, which had only occurred a few days ago and was not reported, the buboes were caused by gonorrhœa; all the others were due to chancroids.

IN MEMORIAM.

Since our last meeting it had pleased Divine Providence to call from our midst Dr. Robert C. Hamill, and the Committee on Necrology submitted the following resolutions:

Resolved, that this Society has learned with profound sorrow of the death of Dr. Hamill, one of the earlier as well as one of the most earnest and efficient members of this Society.

Resolved, that in the death of Dr. Hamill this Society has lost a member typical of the true gentleman in the kindness of his manner, in the great force and energy of his character; typical of the good citizen in his ceaseless efforts to advance the interests of institutions tending to ameliorate the condition of the sick and unfortunate; typical of the patriot in his un-

ceasing efforts to aid and cherish the disabled soldiery of his country ; typical of the wise counsellor in the soundness of his judgments ; typical of the true physician in his earnest cultivation of medical knowledge and in his philanthropic practice of the healing art ; typical of the faithful Christian in his never flagging zeal in all good works.

Resolved, that the Society extend to the bereaved widow of the deceased, in her great loss, sympathy and condolence.

JOHN BARTLETT,

CHAS. GILMAN SMITH,

H. A. JOHNSON,

Committee on Necrology.

TRANSACTIONS OF THE CHICAGO GYNÆCOLOGICAL SOCIETY.

Regular Meeting, Friday, June 18, 1886.

I.—JAGGARD. *A Gravid Uterus with Adnexa, Corresponding to the Sixth Month.*

II.—PARKES. *Discussion of the Paper on Uterine Fibroids Treated by the Fluid Extract of Ergot.*

III.—BYFORD. *A Study of the Causes and Treatment of Pelvic Hæmatoceles.*

The PRESIDENT, DANIEL T. NELSON, M. D., in the chair.

I.—PROFESSOR W. W. JAGGARD exhibited

A GRAVID UTERUS WITH ADNEXA, CORRESPONDING TO THE SIXTH MONTH.

The material was placed at his disposal through the courtesy of Dr. H. H. Frothingham, one of the resident obstetricians of Cook County Hospital.

The patient, 30 years old, multipara, came under obser-

vation May 17, 1886. While sitting on a chair in the ward she began to show signs of asphyxia. She was immediately put to bed, but died within five minutes of the beginning of the attack.

Autopsy made forty-eight hours after death.

External Appearances.—Some venous hypostasis over dependent portions.

Lungs.—Engorged with blood in lower lobes. Œdematous throughout.

Heart.—Left ventricle partially, but not fully contracted, contained fluid blood and small clot. Left auricle contained small amount of clotted blood. Right side of heart contained clotted blood in considerable quantity; clots all dark in color.

Valves.—Normal in thickness and competent. Endocardium—Deep wine color; smooth.

Myocardium.—Soft, friable. Few spots of emphysema under visceral layer of the pericardium. Left coronary artery contained a clot at distal side of first branch. Intima of artery stained deep wine color.

Abdomen.—Peritoneum apparently normal. Gravid uterus with fundus extending to the level of the umbilicus. Large corpus luteum in left ovary. Upon opening the uterus a male foetus, in the embryonal position, was found. Placenta separated from the uterus by its own weight and without any effort to detach it.

Intestines apparently normal.

Liver enlarged, friable, deeply congested. Spleen slightly enlarged, and very friable. Kidneys congested: acute pyelitis in each pelvis. Bladder normal.

Brain.—Some congestion of envelopes, and at posterior

margin of *tentorium cerebelli* two small, round, firm tumors intimately attached to the *dura mater* and pressing upon cerebellum at posterior internal angle of each hemisphere. Tumors are each about the size of a filbert, upon section presenting a grayish firm surface at periphery, and a disintegrated portion at the center. Cerebellum.—Soft and pale throughout, *arbor vitæ* appearance almost entirely disappeared. No trace of hæmorrhage or embolism discovered. Ventricles of cerebrum contained little fluid. The *intima* of the vertebral and basilar arteries presented the same appearance as that of the coronary.

(Tumors referred for microscopical examination.)

Professor Jaggard desired to call attention to the condition of the cervix. The cervix is a funnel shaped object, the neck of which measures 4 cm. in length; thickness of wall, 2 cm. The upper, expanded portion measures 1.5 cm. in length; thickness of the wall, 1.5 cm. The mucous membrane lining this funnel-shaped cervical canal differs in its macroscopic characters from the mucous membrane lining the uterine cavity. The cavity of the cervix is filled with a white, coagulated secretion. The insertion of the membranes forms a circle around the upper expanded portion of the cervix, about 7 cm. in diameter, corresponding to the site of several large veins in the muscular substance of the uterus, and the insertion of the peritoneum externally. At this point, the muscular substance of the uterine wall becomes thinner. The average thickness of the muscular wall of the uterus is 1 cm.; that of the cervix 1.5 to 2 cm. Total length of the uterus, 17 cm.

The macroscopical characters of the preparation seemed to sustain the position assumed by Bandl, Küstner and Carl

Braun, recently opposed with considerable force by M. Hofmeier. Dr. John Bartlett, a distinguished Fellow of the Society, read a paper entitled **The Cervix Uteri Before, During and After Labour*, July 14, 1873, before the Chicago Medical Society (several years prior to the appearance of Bandl's classical monograph upon the same subject) from which the following extract is made :

"Early in pregnancy the neck of the uterus is called upon to supply its quota to the enlarging body. Speaking somewhat figuratively, as ring after ring of tissue is demanded from the upper part of the cervix, the preparatory development in the remaining portion is such that the length of the neck is not apparently impaired, so that what remains of it as late as two weeks before labour has been mistaken for the entire infra and supra vaginal cervix, whilst the loss by the continual transfer from the upper portions of the neck to the uterine walls has entirely escaped notice. That circle of the neck which corresponds at the time of an examination to the limits of its expansion, is regarded by writers as the os internum. The os internum is, of course, as before labor, above the attachment of the vagina, and, near term, far removed from the examining finger. The apparent constriction taken for it is simply that point in the cervical walls marking the constantly decreasing line of demarcation between the expanded and yet unexpanded portions of the neck."

II.—PROFESSOR A. REEVES JACKSON, in beginning the discussion on Dr. Parkes' paper on the treatment of uterine fibroids by ergot, said : I was very much pleased to hear the reading of Dr. Parkes' paper. I commenced using ergot in the treatment of fibroids in June, 1873. I had used it in

* The Chicago Medical Journal, October, 1873.

eight cases at the time Dr. Byford read his paper based on 103 observations gathered from various persons in this country. I was extremely pleased with the result; two of the patients seemed to be practically cured—that is to say, while there could be distinguished some remaining enlargement of the uterus, the symptoms that were referable to the presence of the tumor were entirely removed, and the patients suffered no inconvenience from the bulk of the uterus. In nearly every case there was improvement. I continued to use it for several years, but have not used it lately—I do not know why. The cases that have been published by those who use it extensively have all shown favorable results except those of Martin, of Berlin, and perhaps two or three others. There seems to be no reason to doubt that ergot, whether given hypodermically, by the mouth or rectum, does have some controlling influence on the development of uterine myomata, checking the growth or lessening the size of the tumor. Indeed, there is reason to believe that it is one of the very best means of dealing with these tumors. I have used the remedy in perhaps thirty cases. I do not know just what the ratio of success was. In about three-fourths of these cases there was benefit. Sometimes the good effect did not consist in diminution of the size of the neoplasm, but from improvement in the general health of the patient. I was very glad to hear of the almost phenomenal success that followed the practice of Dr. Parkes. In some of the cases he relates the patients were, however, evidently in great jeopardy from the sloughing of the mass, and the difficulty of getting it away before septicæmic symptom came on. There is great danger, unquestionably, in having a sloughing fibroid retained within the uterus. The treatment by ergot should be accompanied by dilation of the cervix, so that the mass, when separated

from the wall of the uterus, may escape readily. This would lessen that danger. In some cases death has occurred very soon after the stinking discharge appears. Nevertheless, the treatment by ergot is very much less dangerous than any of our surgical methods of dealing with uterine fibroids.

THE PRESIDENT: Have you kept records of any of your cases?

PROFESSOR JACKSON: Yes, and I shall be glad, if the interest continues, to report them in detail. I kept accurate notes of the first cases so far as I had charge of the patients. Some of them occurred in the Woman's Hospital, and the patients would go away, and we did not always have means of ascertaining the final results. But of others, occurring in private practice, I can give accurate details.

DR. H. T. BYFORD: I made the assertion that there was no danger of a sloughing of the tumor when it is not situated so that it can be expelled by way of the vagina. This was based on the fact that, unless submucous, it cannot be firmly enough compressed. I have reported a case of fibroid tumor of the vagina,* whose thick pedicle was gradually cut through by daily tightening a fine wire about it; when the wire had cut through the pedicle, it was found to have reattached itself and retained its vitality, showing that tumors of this nature require very little nourishment to keep them from undergoing sloughing. The cases on record are very few in which subperitoneal growths have sloughed from the use of ergot.

PROFESSOR W. W. JAGGARD said, with reference to priority in the use of ergot in the treatment of uterine fibroids, that Hildebrandt, of Königsberg, had published a paper in 1872, in which he recommended the drug. The growth of the neo-

* Chicago Medical Journal and Examiner, August, 1885.

plasm was limited by diminished access of blood, and, in some cases, it was actually expelled from the uterine cavity. Hildebrandt's recommendation was the revival of an old practice. Dr. Wm. H. Byford's paper—Address on Obstetrics—was read in Philadelphia in 1875. During the interval of three years, several papers were written extolling the action of ergot in the treatment of uterine fibroids, both in the diminution of the quantity of blood flowing to the tumor, and also in actively causing its expulsion from the uterus.

DR. HENRY T. BYFORD said: Dr. Jaggard fails to take into consideration the different ways in which ergot acts. It acts first, in a radical way by expelling the tumor, as in the submucous variety; second, in a gradual way by causing atrophy and absorption, as in the interstitial variety; third, in a partial way, by arresting the tumor's growth and activity, as the subserous ones; fourth, in a palliative way by relieving the symptoms, as in cases of large tumors, near the menopause. Schroeder in the last edition of his *Krankheiten der Weiblichen Geschlechtsorgane*, gives Dr. Wm. H. Byford credit for suggesting the use of ergot for the expulsion of the tumor. There is no longer any reason to doubt that ergot is the surest and safest cure for all but the very exceptional cases of uterine fibro-myomata. A tolerance of moderate doses is quickly established both by the organs through which it is absorbed and by the general system. Sloughing is almost never produced except in the submucous variety, when it need not be dangerous. For several years past, with one or two exceptions, I have not given ergot in any other way than by the rectum. I use 5 to 8 grains of Squibb's extract of ergot twice a day and continue it for two or three years, with favorable results. I remember one case in which the tumor extended almost to the umbilicus when I first saw her, five years ago. It was an

irregular, nodulated tumor, mostly subperitoneal, with projections larger than the fist, filling up the pelvis, and to a great extent the false pelvis also, and sometimes caused excruciating pain by its pressure. The patient had repeatedly bled through six and eight weeks, and must have lost one hundred pounds. Tampons were required to save her life. I never saw paler mucous membranes in a living being. It was a very much worse case than many which I continually find cited in medical literature, in which hysterectomy is considered necessary. The patient begged to have the tumor removed. She could not take the ergot for any length of time either by rectum or mouth; but after a while she tolerated 5-grain rectal suppositories, and has passed the menopause. The tumor, having lost its activity, has become considerably smaller; while she, having regained her hundred pounds, has become considerably larger. I have a case which had been treated for a year with all of the most approved remedies, except ergot. When I first saw the patient, two years ago, she weighed eighty-three pounds; she had a nervous chill and almost fainted when I first entered the room, because I was a stranger. She had not slept for weeks except under the influence of narcotics, and had symptoms of acute tuberculosis. She was in the habit of bleeding steadily from three to six weeks, and was being so rapidly destroyed by the loss of blood that I at first had to use the tampon. She was put upon eight grains of Squibb's fluid extract of ergot per rectum and tincture of iron by the mouth. Her health improved rapidly and the hæmorrhages progressively diminished. Her lungs were recently examined by Dr. H. A. Johnson, who found the remains of old trouble, but no tendency to unfavorable changes. Her cough, which had lasted so long, has entirely left her. She now takes the ergot a part of the time only. Her menses last four days, are natural in

quantity and quality, and are followed every two or three months by a watery discharge of a faint pinkish tinge. She cannot feel the tumor now, although a projection the size of a child's head was formerly felt by her between the umbilicus and left groin. It might be said of this case that it was also a very proper one for operation, and one in which ergot, if harmful to the system, would have done injury. I have similarly relieved other cases nearly as bad, and cannot help believing that, when treated early, judiciously and persistently by ergot, fibroid tumors of the uterous will show a mortality of 1 or 2 per centum instead of 10 per centum as at present; that hysterectomy for fibroids, with its mortality of 20 to 40 per centum, will eventually become an interesting relic, and the removal of the appendages a precious rarity.

DR E. W. SAWYER said: There is one point that was not alluded to by the reader of the essay, and that has not been spoken of in the discussion. The fact that the point has been proved in practice shows that it is worthy of attention. That ergot will cause atrophy of a uterine fibroid, causing a detachment by ulceration and expulsion, is a well-established fact. When the fibroid is submucous, or nearer to the mucosa of the uterus than to its peritoneal surface, I have no doubt that that process can be continued and completed with safety. But let us suppose a tumor very close to the peritoneal surface; this process of atrophy takes place, the peritoneum ulcerates through, and the life of the woman is jeopardized. Such a condition occurred in a patient seen by the President of this Society, and it was shown that had the patient lived long enough the fibroid might have been thrown off through the abdominal parietes. This patient died of peritonitis. The large and partially detached fibroid was in a sac containing

a great quantity of pus. This sac had ruptured, occasioning the peritonitis.

PROFESSOR F. E. WAXHAM said: I would simply add my testimony as to the value of ergot in the treatment of sub-mucous fibroids, by citing a case: A woman, 45 years old, came to me some time ago complaining of copious hæmorrhages at her menstrual periods, and upon careful examination an enlarged uterus was found, which nearly reached the umbilicus. The diagnosis of fibroid of the uterus was made. This woman was placed upon ergot, combined with opium, to control the pain, which she took for several weeks. Between the second and third months after commencing to take the ergot, I was called to her in great haste and found her apparently in labor, the uterine contractions quite regular and very severe; a partially dilated os and the tumor presenting. This tumor was expelled after two or three hours. It was nearly as large as a child's head at time of birth. The patient made a complete recovery.

THE PRESIDENT: In what state was the tumor?

PROFESSOR WAXHAM: I can hardly say it was softened, but it was fleshy in character, and some pus upon it as though it had suppurated. It was somewhat offensive, I remember. I attended her for some weeks subsequently; there was some febrile reaction, but no serious trouble followed.

THE PRESIDENT said: I have reported a case in which a tumor was thrown off without sepsis. I have had since quite a series of cases in which tumors have been thrown off; some have been absorbed and there has been a various history, which I hope to make the subject of a special paper, and would like the assistance of others in making up a

history of these cases. I think we are specially favored in having with us Dr. Wm. H. Byford, who has had such extended experience in these cases.

PROFESSOR W. H. BYFORD, in closing the discussion, said: Mr. President, you are right in supposing that I feel great interest in this subject. I have made it a study for a long time. Perhaps as good a way as any to introduce my views on this subject to the Society, will be to go back to the commencement of my own researches in this matter. In 1872, as Dr. Jaggard has said, Hildebrandt commenced a series of experiments for checking the hæmorrhages connected with fibroid tumors of the uterus, by giving hypodermic injections of the extract of ergot, and succeeded in a great many instances in suppressing the hæmorrhage and relieving the patient from the inconvenient symptoms. During these experiments he also ascertained that the tumor would sometimes disappear. I think his statistics were not large, and that he only reported a very few, perhaps three or four, cases in which the tumors disappeared by atrophy during the time he treated them in this way. In 1874 I was elected to the chairmanship of the Section of Obstetrics in the American Medical Association, and as these experiments of Hildebrandt had attracted considerable attention, I thought it would be a good time to make some investigations as to the value of his facts. I commenced correspondence over a large portion of the United States and Europe, but especially communicated with my friends in this part of the country, among whom were my immediate associates in this city, who had been engaged in using hypodermic injections of ergotine according to the method of Hildebrandt, once in two or three days. All of them bore testimony as

to the efficacy of that kind of treatment, and as to the fact that these tumors could be made to disappear in a great many instances by atrophy, and in a great many more the symptoms could be relieved so that the patient was rendered comfortable, the presence of the tumor giving them but little inconvenience. Some of the gentlemen with whom I had correspondence had been using the ergot in different ways, giving it by mouth, giving it *per rectum*, and injecting it into the tumor itself and by various other methods. I noticed one fact in my own practice and that of my friends, which was that the more frequently the ergot was given the more powerful its action was. In giving it two or three times a week hypodermically by the Hildebrandt method, there is very little distress produced by it; but the tumor may gradually disappear and the symptoms get better. I collected 103 cases from different parts of the country, and in all of them the attention of the practitioner was directed to the point of causing the disappearance of the tumor by atrophy. During the time I was making these investigations cases of fibroid tumors occurred in the practice of my friends, who consulted me. One was a remarkable instance in the practice of Dr. Merriam. I remember the particulars. The patient was a little Irish woman who had a tumor almost large enough to reach to the umbilicus. He commenced the use of ergot in September, 1874, twenty drops of Squibb's fluid extract three times a day. It produced so much contraction of the uterus and so much pain as to alarm the patient and the doctor himself; he thought these pains ought to be suppressed, and as a consequence he would intermit the use of ergot, give anodynes to stop the pain and get relief from the sufferings of the patient, but would recur to ergot as soon as his fears had sub-

sided. In January, 1875, he directed her to recommence the ergot and increase the amount. He gave her, I remember very well, twenty-five drops of Squibb's fluid extract three times a day. In March, which was about two months from the time he began giving her ergot in that way, the patient commenced having expulsive pains very much like labor, and not long after that, probably about March 20th, there commenced to issue from the vagina a putrid liquid that was very offensive and which contained small pieces of organized substance. He became alarmed and entirely withdrew the ergot, supposing he was doing mischief, but the death of the tumor had been produced and as a consequence the uterus continued its action to throw off this foreign body, until April 5, 1875, he was summoned in great haste to see his patient. I was also summoned. Upon arriving at the house, which he did before me, he found the tumor expelled, part of it laid in the vagina and part between the limbs of the patient, a protruding mass almost the size of a child's head. It was not expelled in a lump, but was broken in pieces that would represent that size. The patient at that time had septic fever, with increased temperature and increased frequency of pulse, etc. The Doctor and I both felt uneasy about her, but she very soon rallied and in a short time was well, and since has given birth to a child.

That was my first observation as to expulsion of tumors of that kind. It started a train of thought in my mind and led me to think about increasing the ergot beyond the amount that had usually been given for producing atrophy. In the same year, July, 1875, I commenced giving it with the view of expelling a tumor. I gave my patient at first fifteen-drop doses of Squibb's fluid extract three times a day, and increased it until the patient was taking a teaspoonful of ergot three

times a day. On August 15th, about five weeks after I commenced using it, the tumor was broken up and expelled from the vagina. It was expelled by pieces, the first piece about as large as my thumb, of a grayish kind of substance that smelled very badly. The action continued; I was somewhat alarmed and gave the patient anodynes, but the uterus had already commenced to act on the tumor and expelled it, as it would any foreign body. In December of the same year I had an opportunity of repeating the experiment, and the case terminated in the course of six weeks, by the same method of administering the ergot. In 1876, on returning from the world's exposition at Philadelphia, I was requested to call at Coldwater, Mich., to see two patients, one with cancer and one with a tumor. I found one of these patients with a tumor as large as my head, the measurement of the cavity being fully six inches. I told her I believed the tumor could be expelled if she was willing to go through the process. I felt uneasy, however, to leave her to use such medicine by herself, and tried to teach her how she should proceed when the expulsion should take place. She took the ergot three months without much effect, except that occasionally she would have a paroxysm of pain; after that, however, the pains became so very severe that she could not take the ergot much of time. But, brave and intelligent as she was, she repeatedly resumed it, and finally the tumor commenced to come away. It came away in about five weeks from the time the first symptoms of expulsion occurred. She wrote me a description of the method of expulsion. She said at first small lumps made their appearance and passed out of the vagina; after the second day they became larger, and on the third and fourth days they seemed large enough to fill up the vagina. With her scissors she cut off pieces of it and pulled

at it to assist its removal. She labored at it two or three days until it was all expelled. In about three weeks thereafter she came to see me, and the uterus had shrunk back to near its natural size. She has since had the menopause, and is now in good health. She sent me at that time a quart cup full of this expelled fibrous substance.

Another case occurred in the western part of this state, under the care of Dr. Crandall, of Sterling. The patient came, by his directions, to see me, and I found a tumor of considerable dimensions and advised her to take ergot. She went home and in about fifteen or twenty days got her work done up, as she expressed it, took three doses of thirty drops of Squibb's fluid extract of ergot, and started up such a process of expulsion that, notwithstanding the efforts of her physician to stop it, the pains went on to the expulsion of the tumor, which was completed in about three weeks.

Dr. Wm. Fox, of Milwaukee, three years ago sent me a report of another similar case. In summing up these observations, I have known personally of twenty-six cases of expulsion of the tumor in this way. With reference to the dangers connected with the expulsion, I would say that only one out of these twenty-six cases proved fatal. They all had septicæmia to some extent, but as soon as the mass of dead tumor was removed the patient commenced to recover and got well. Some of the patients had no assistance. This one patient in whom it proved fatal lived in Monmouth. It occurred about six years ago. She was a lady who, like all other foolish women, distrusted her home physicians, and she came here supposing she would find better treatment. I advised her to take ergot, and in about three months the pains commenced that caused the tumor to be expelled. She came here with the lower part of the tumor hanging from the vagina and uterus while the

upper portion was clinging to the cavity in which the whole of it had been lodged. She was then laboring under a high fever. The smell was terrible. She came to the Tremont House and it was several hours before I could see her. When I arrived it was a very simple matter to enucleate it, and I removed it in a few minutes. But she had already received a fatal poisoning from the retention of the dead tumor. This is the only case I have known to prove fatal. I do not get a history from other gentlemen of any more unfavorable results. They all tell me they are frightened at the symptoms, and they are afraid the patients are going to die, but they do not die. When the mass is taken away and the vagina washed out the symptoms disappear. Since thinking of this matter and observing the effects of this remedy I have thought that I could come to definite conclusions as to the conditions under which we might predict the expulsive effects of ergot by the appearance of the tumor. You know that it is not a very common thing to find a case in which there is a single tumor in the fibrous tissue of the uterus. More frequently these tumors are complex. Quite a number of nuclei of formation; we often see in one uterus four or five, sometimes fifty different points of solidification. Now a single, or even a double tumor, located within the circle of the fibrous arch of the uterus near the mucous membrane, is the kind that I think may almost certainly be expelled. If you find a case of symmetrical development, where the uterus seems near its normal shape, no matter how big, so it is normal in shape, oval, or globular, without any large projections standing out in various directions, feeling somewhat elastic to the touch, and attended with hæmorrhage, you may be pretty sure you can expel the tumor by commencing with small doses of ergot and increasing them in size, and then when the pains begin, not to stop

them. The presence of severe pains frightens a great many men from finishing what they have begun. If I were to try to explain this operation I would say when ergot is given in this way, after a while the tumor becomes starved, the supply is cut off so there is not blood enough to support it, and very soon it dies in consequence of this strangling process. When it dies there is, at the same time, gangrene of the mucous membrane covering it; then it becomes a foreign body and you cannot keep the uterus from expelling it. The expulsion is a consequence of this starvation and killing process in the tumor. As to the action of ergot in tumors that are not sub-mucous, of course I know that tumors not sub-mucous cannot be expelled. There is what is called the interstitial tumor, developed in the central stratum of the fibrous walls of the uterus; these are the proper subjects of the Hildebrandt process for atrophization. Then with reference to the effect of ergot upon subperitoneal tumors; I have often been asked the question, Can ergot affect these subperitoneal tumors? I think they are frequently starved out and cured; when not too near the peritoneum there is no danger of their becoming detached and putrid in the peritoneal cavity, because the action is from the tumor. In the submucous tumor the contractions are all towards it and none from it. There is one circumstance to be taken in connection with these tumors and the action of ergot upon them, that has not been sufficiently considered. A large proportion of them growing to any considerable size contract attachments to the peritoneal membrane, the intestines, omentum, or the walls of the abdomen, and in making this attachment they get a new supply of blood, which makes the life of the tumor more tenacious than it would be otherwise. This very process of adhesion to the walls of the abdomen is, more than any other, the cause of their great size

and the change from a fibrous to a fibro-cystic tumor. We need not expect such tumors to be affected by ergot. There are a good many other things that interfere with the successful use of ergot, of which I cannot now speak. I am grateful to my western associates who have assisted me by facts and experiments on this subject. If you go to the eastern part of the United States they will tell you that ergot is of no use in the treatment of fibrous tumors, or it is too dangerous; the patient cannot live under the pains of expulsion, etc.; but if these same gentlemen had a patient in labor they would urge the pains instead of stopping them. Most physicians who do not believe in the efficacy of ergot use Hildebrandt's method pretty much altogether, which produces tonic contraction of the fibres of the uterus, but does not go to the extent of causing expulsive pains. Then, again, there is too great apprehension on the part of the profession generally of the dangerous toxæmia from ergot. I do not know whether the history we have of the poisonous influence of ergot in producing nervous diseases, gangrene, and so on, is true; whether the observations that led to that teaching were correct at one time or not, but I know that after the use of ergot persistently for two or three years in the same case, I have never seen any evil influence produced by it, unless it is in cases where the violent action of the uterus would be regarded as such. I have purposely avoided saying anything about the *modus operandi* of ergot in causing contractions in the uterine fibres, because that is now sufficiently understood by the profession. But, Mr. President, I feel that I have occupied too much of the valuable time of the society already, and will say no more.

DR. H. T. BYFORD read a paper entitled

III.—A STUDY OF THE CAUSE AND TREATMENT OF PELVIC
HÆMATOCELES.

The author cited the case of a non-suppurating, retro-uterine hæmatocele of six months' standing, which he evacuated *per vaginam* March 18, 1886, and then treated with antiseptic irrigations. She was up and about the house in eleven days. As the odor and discharge were still causing discomfort, the doctor, influenced by the advice of Apostoli and Doléris, curetted the cavity. He found no more blood or débris, but started up a mild attack of local peritonitis, which delayed instead of hastening the cure. The patient left the hospital in a little less than a month after the cessation of all discharge. A small lump of induration extending from the abscess opening to the right sacro-uterine ligament was all that was left of the tumor.

The following résumé of interesting points in the case is given :

1. The length of time from the occurrence of the hæmatocele to the time of operation, about six months.
2. The method of opening the cavity, viz. : by first tearing the vaginal wall, and afterwards the sac wall.
3. The absence of fluid in the tumor.
4. The breaking up of the mass with the finger without an attempt at thorough curetting or removal of the entire contents.
5. The complete disintegration and discharge of all bloody substance in thirteen days.
6. The absence of high temperature—102° F. having never been reached.
7. The small amount of anodyne required—one dose (except the two doses to relieve the irritation from subsequent unnecessary curetting).

8. The toleration of strong antiseptic solutions. It was necessary to weaken them on account of their effect upon the vagina.

9. The absence of the usual amount of odor in such decomposing masses.

10. The large quantity of food taken throughout.

11. The absence of any kind of sickness from the beginning until the cavity was curetted.

12. The curetting of the cavity on the thirteenth day delayed her recovery, producing the only serious symptoms that were noticed.

13. Notwithstanding a setback of ten days, caused by the curetting, she was well enough to go home inside of a month and dispense with treatment.

14. The attack came on after a miscarriage.

P. F. Mundé reports two new cases of hæmatoma successfully operated upon three and six weeks, respectively, after their occurrence, both large, and resulting from or after abortions. (*N. Y. Medicinische Presse*, Vol. I, No. 1, Dec., 1885.)

Five other cases were briefly related, four extra-peritoneal hæmatomas and one large retro-uterine hæmatocele, which had come under the writer's observation during the past two years, and which were successfully treated on the expectant plan. He was unable to find justification in any text-book for having operated in the absence of any threatening symptoms until he procured the last edition of Billroth & Lücke's "*Frauenkrankheiten*" and Schroeder's text-book (both of 1886). He cautions against taking the advice of Bandl, to operate after the first subsequent menstrual period, or that of Apostoli and Doléris, to operate immediately by the galvano-puncture wherever and whenever found. Operations at such times are connected with what are designated as immediate dangers, viz.

"a recurrence of shock, hæmorrhage, or (if hæmostatic tampons be used) of inflammation; or of septicæmia followed by inflammation, if antiseptic injections of sufficient strength be used."

The dangers of the expectant treatment are mostly remote, and are such as "suppuration, septicæmia, perforation, and prolonged pressure upon, and displacement of, surrounding organs, with their results, viz.: the aggravation and perpetuation of pre-existing pelvic disease, or the originating of new ones."

While recognizing the necessity for evacuation within the first three or four weeks in certain exceptional cases, he would, as a rule, delay operating long enough to avoid the immediate dangers, yet not long enough to incur the remote dangers of delay. The patient must invariably be kept in bed and the tumor should be left alone until the primary acute symptoms subside. If the tumor remain hard and diminish in size, no matter how slowly, it should be let alone as long as the symptoms do not become worse. If the tumor remain stationary and boggy to the feel, and the symptoms begin, after a few weeks, to increase in severity, it must be operated upon; or if the symptoms remain without improvement, while the tumor shows no signs of being absorbed, it is better not to wait for serious symptoms, but operate in the subacute stage, or when the symptoms have subsided as much as they will. There is a certain class of cases, like the first one reported, in which the acute symptoms subside, the patient recovers considerable strength, but the tumor remains elastic, or boggy, and almost stationary, and interferes with her usefulness. If the patient cannot, from adverse circumstances, or does not wish to make an invalid of herself for the many months of quiet and careful-

ness requisite for safe absorption of the organized clot, she should have the benefit of an operation at a time when it is almost devoid of danger.

DR. BYFORD would not select the method of operating recommended by Apostoli and Doléris because two sittings would be required for a complete operation, and because the use of the currette through so small an opening as would be justifiable by galvano-puncture is not devoid of danger. He prefers puncturing and tearing with a dilator, first the vaginal and then the cyst wall, to Zweifel's method of incising, on account of the less liability to trouble from hæmorrhage. He also advises the attack of such retrouterine hæmatoceles as are accompanied by obliteration of the Douglas cul-de-sac by puncture and dilation per rectum, when possible. The difficulty would be but little greater than the dilatation of the fistulous opening of a pelvic abscess.

Though curetting is condemned as dangerous, but a breaking up of all solid material by the finger, and the trusting to copious, strong, antiseptic irrigations (which can be endured much stronger if the abscess walls are not scraped) is recommended. Hydrarg. bin-iodide $\frac{1}{3000}$, or bi-chloride $\frac{1}{2000}$, or carbolic acid $1\frac{1}{2}$ to 2 per cent. twice or three times a day, as necessary. Instead of a drainage-tube being used, the finger may be passed through the opening daily in order to dilate and insure free discharge. On account of diagnostic difficulties an aspirating needle should precede the use of the knife.

The discussion of Dr. Byford's paper was deferred until the next regular meeting.

W. W. JAGGARD, M. D., Editor.

2330 Indiana Ave., August 15, 1885.

BOOK REVIEWS.

PUERPERAL CONVALESCENCE AND THE DISEASES OF THE PUERPERAL PERIOD. *By* JOSEPH KUCHER, M.D. *12mo, pp. 311.*
New York: J. H. VAIL & Co. 1886.

Dr. Kucher has attempted in this book "to concisely reflect the views on the management of childbed, and upon the origin and treatment of the puerperal diseases, as accepted and in practice at the Vienna lying-in hospital." The purpose of the work is obviously excellent. The doctrines of the Vienna school have for a considerable period of time exercised an important influence upon the theory and practice of obstetrics in the United States, gradually replacing the English and French teachings of a former generation.

No adequate exposition of the puerperal diseases from the Vienna point of view has before appeared in English, and the lack of such a treatise has been keenly felt by every scientific practitioner of midwifery who is not familiar with the German language. The expectations of the general reader upon taking up Dr. Kucher's little book are high, and he is disposed to resent any imperfections in the performance of such an important undertaking. Then, too, Dr. Kucher has a large class of critics, composed of medical men, who have studied in Vienna and who ought to know the teachings of that school. Dr. Kucher's task is accordingly one of very unusual difficulty.

A careful reading of the book, however, must convince the most uncharitable critic that the design has been most admirably executed. More than this, Dr. Kucher adds value to the book by the free discussion of the relative values of the

various methods of treatment. He writes as an authority upon the subject, and justly,—supported as he is by his experience in the Vienna lying-in hospital, a period of over four years, implying an observation of nearly 14,000 cases—and in private practice in New York.

In the brief space at our command, it is possible merely to call attention to a few of the topics considered.

In the chapter on "Mastitis," fissures and abrasions of the nipple are correctly mentioned as "the channels by which the infecting matter gains entrance to the breast and causes inflammation." While retention and impaired flow of milk, as ætiological factors, are relegated to their proper places among *a priori* conclusions and preconceived notions.

In the chapter on "Lacerations of the Perineum," the Vienna method of prevention is concisely sketched. Episiotomy—a little operation comparatively unknown in the United States—is recommended when laceration is otherwise unavoidable. In none of the more ambitious American or English text-books on midwifery has the Vienna method of perineal protection received such a clear description. It is a fact, an undeniable fact, that this distressing accident seldom occurs in the Vienna lying-in hospital, while its relative frequency of occurrence in the United States is one of the *opprobria* of the art of midwifery. The accident is entirely avoidable in the very large majority of cases, and Dr. Kucher has clearly pointed out the way by which this object may be attained.

We notice, with regret, the absence of any suggestions with reference to the prevention of laceration of the cervix, also an accident of comparatively frequent occurrence in our country, and due, in many cases, to meddlesome mid-

wifery, *i. e.*, the premature rupture of the bag of waters, the pernicious habit of digital dilatation, and the application of the forceps before complete dilatation of the cervix.

In the chapter on "Eclampsia," the theory of acute renal insufficiency is ably sustained. Pilocarpine and blood-letting are rightly relegated to the domain of obsolete measures.

About one-half of the book is devoted to the consideration of puerperal fever. The views of Semmelweiss are ably defended. All cases of puerperal fever arise "from the absorption of decomposing organic matter from lesions of the genital tract;" the septic element may be introduced from without (hetero-infection), or originated in the generative organs (auto-infection.) The note on "The Relation of the Atmosphere to Puerperal Fever" is of especial interest to the American practitioner, familiarized as he is with such vague, fanciful terms as "nosocomial malaria," "hospitalism," and the like. Dr. Kucher is very definitely of the opinion that atmospheric and telluric influences play a very insignificant role in the ætiology of puerperal fever. His views upon the subject do not differ essentially from the conclusions of Credé (*Gesunde und Kranke Wöchnerinnen, Leipzig, 1886.*) The doctrine of childbed fever, thus imperfectly indicated, is not attractive to the general obstetrician. As Dr. Kucher remarks: "Semmelweiss's theory is a blessing to the patient, but quite another thing to the physician. The old obstetricians were helpless in the prevention of puerperal fever, but they never had a sleepless night from remorse. There is nothing but the hard evidences of fact, *la brutalité des faits*, which forces us to accept this theory."

Dr. Kucher's little book, regarded as a whole, is, in our opinion, unquestionably the best treatise on the subject in the English language. It is one of the few books that are "to be chewed and digested;" that is, "to be read wholly, and with diligence and attention."

W. W. J.

INTERNATIONAL MEDICAL CONGRESS.

CIRCULAR NO. 2.

NINTH INTERNATIONAL MEDICAL CONGRESS.

The Ninth International Medical Congress will assemble in the city of Washington, the Capital of the United States, on Monday, September 5, 1887, at 12 o'clock noon, in accordance with the arrangements made at Copenhagen in August, 1884.

PATRONS.

The President of the United States.—THE HON. GROVER CLEVELAND.

The Secretary of State.—THE HON. THOMAS F. BAYARD.

The President of the Senate of the United States.—THE HON. JOHN SHERMAN.

The Speaker of the House of Representatives of the United States.—THE HON. JOHN G. CARLISLE.

PROPOSED OFFICERS OF THE CONGRESS.

President.—Nathan S. Davis, M. D., LL. D., Professor of the Principles and Practice of Medicine and of Clinical Medicine, Chicago Medical College, and of Mercy Hospital, Chicago, Illinois.

Vice-Presidents, as far as appointed.—Professor J. McCall Anderson, M. D., Glasgow, Scotland; Mr. Thomas Annandale, Professor of Clinical Surgery, Edinburgh University, Edinburgh, Scotland; Professor Dujardin-Beaumetz, M. D., Paris, France; Cuthbert Hilton Golding Bird, M. D., Professor of Physiology, Guy's Hospital, London, England; Professor Carl Braun, M. D., Vienna, Austria; William Brodie, M. D., Emeritus Professor of Principles and Practice of Medicine and Clinical Medicine, Detroit College of Medicine, Detroit, Michigan; W. W. Dawson, M. D., Professor of Surgery and Clinical Surgery, Medical College of Ohio, Cincinnati, Ohio; Thomas M. Dolan, M. D., Halifax, England; F. R. Frazer, M. D., Professor of Materia Medica and Therapeutics, University of Edinburgh, Edinburgh, Scotland; J. A. Grant, M. D., Ottawa, Canada; J. A. S. Grant, M. D., Cairo, Egypt; A. L. S. Gusserow, M. D., Professor of Obstetrics, Berlin, Prussia; Dr. Hans Ritter von Hebra, Vienna, Austria; Dr. E. Klein, London, England; Mons. Le Baron H. Larrey, Paris, France; Sir William MacCormac, Surgeon St. Thomas' Hospital, London, England; Mr. George B. Macleod, Professor of Surgery, Glasgow, Scotland; John S. McGrew, M. D., Honolulu, Hawaiian Islands; E. M. Moore, M. D., LL. D., Rochester, New York; Professor Von Monseil, Bonn, Prussia; Dr. Müller, Berlin, Prussia; William Murrell, M. D., London, England; Charles D. F. Phillips, M. D., M. R. C. S., late Lecturer on Materia Medica and Therapeutics, Westminster Hospital, London, England; Richard Quain, M. D., Professor of Anatomy, London, England; Tobias G. Richardson, M. D.,

Professor of General and Clinical Surgery, Medical Department, Tulane University, New Orleans, Louisiana; Mons. P. Ricord, Paris, France; Professor John Burdon Sanderson, M.D., London, England; Lewis A. Sayre, M.D., Professor of Orthopædic and Clinical Surgery, Bellevue Hospital Medical College, New York; Dr. Mariano Semmola, Professor of Experimental Therapeutics, University of Naples, Italy; Dr. Leopold Servais, Antwerp, Belgium; J. M. Toner, M.D., Washington, D. C.; Dr. P. G. Unna, Hamburg, Germany; Professor F. Winckel, Dresden, Saxony; The President of the American Medical Association; The Surgeon-General of the United States Army; The Surgeon-General of the United States Navy.

Secretary-General.—John B. Hamilton, M.D., Supervising Surgeon-General of the United States Marine Hospital Service; Professor of Surgery, Georgetown University, D. C.; Professor of Surgery, Chicago Policlinic.

Treasurer.—E. S. F. Arnold, M.D., M.R.C.S., Newport, Rhode Island.

Chairman of the Finance Committee.—Richard J. Dunglison, M.D., Philadelphia, Pennsylvania.

Chairman of the Executive Committee.—Henry H. Smith, M.D., LL.D., Emeritus Professor of Surgery in the University of Pennsylvania, Philadelphia, Pennsylvania.

Chairman of the Committee of Arrangements.—A. Y. P. Garnett, M.D., Emeritus Professor of Clinical Medicine, Columbia University, Washington, D. C.

Associate Secretaries of the Congress.—William B. Atkinson, M.D., Philadelphia, Pennsylvania; G. B. Harrison, M.D., Washington, D. C.

The Congress will consist of such members of the Regular Medical Profession as shall have registered and taken out their ticket of admission, and of such other Scientific men as the Executive Committee of the Congress shall deem it desirable to admit. The books for the Registration of Members will be open from 9 A. M. to 5 P. M., on Thursday, September 1, 1887, and on each subsequent day during the Session, under the charge of the "*Reception Committee.*" Any member desiring to anticipate this Registration, can apply by letter to the Secretary General and forward his dues, with his address in full, when a receipt will be returned.

The dues of Membership for residents of the United States will be Ten dollars (\$10.00). There will be no dues for members residing in other countries. Each member will be entitled to receive a copy of the "*Transactions*" of the Congress, when published by the Executive Committee.

The General Sessions of the Congress will be devoted to the transaction of business and Addresses and Communications of general scientific interest, by members appointed by the Executive Committee. A printed "Programme" of the Sessions will be presented to each member on registering. A printed "Order of Business" for each day will also be issued.

The work of the various Sections will be directed by the President of the Section, and the order will be published in a daily Programme for each Section. Questions and topics that have been agreed on for discussion in the Sections, shall be introduced by members previously designated by the titular officers of each Section. Members who shall have been ap-

pointed to open discussions, shall present to the Secretaries of the Section, in advance, statements of the conclusions which they have formed as a basis for the debate.

Brief abstracts of Papers to be read in the Sections shall be forwarded to the Secretaries of the proper Section on or before *April 30, 1887*. These abstracts shall be treated as confidential communications, and shall not be published before the meeting of the Congress. Papers relating to topics not included in the list of subjects proposed by the Officers of the Sections, may be accepted after April 30, 1887, and any member wishing to introduce a topic not on the regular lists of subjects for discussion, shall give notice of the same to the Secretary-General, at least twenty-one days before the opening of the Congress. The titular officers of each Section shall decide as to the acceptance of such proposed communications, and the time for their presentation. No communication shall be received which has been already published or read before a Society.

The official languages of the Congress shall be English, French and German. Each paper or address shall be printed in the "*Transactions*" in the language in which it was presented. Preliminary abstracts of papers and addresses shall also be printed in the language in which each is to be delivered. All discussions shall be printed in English.

The officers of the Congress and the officers of the Sections, including all foreign officers, will be nominated to the Congress by the Executive Committee, at the opening of the first session. A partial list of the officers to be nominated (except the members of Council of the different Sections, the list of whom is at present imperfect), is offered herewith.

The Executive Committee cordially invites members of the regular medical profession, and men eminent in the sciences collateral to medicine, in all countries, to participate, in person or by papers, in the work of this great humanitarian assembly. Communications relating to appointments for papers to be read in the Congress should be addressed to Dr. John B. Hamilton, Secretary-General of the Ninth International Medical Congress, Washington, District of Columbia. All questions or communications connected with the business of the Executive Committee should be addressed to Dr. Henry H. Smith, Chairman of the Executive Committee of the Ninth International Medical Congress, Philadelphia, Pennsylvania. Gentlemen named in any position in the Congress are requested to notify the Chairman of the Executive Committee, as soon as practicable, of any error in the name, title or address in this circular.

Ladies in attendance with members of the Congress, and those invited by the "Reception Committee," may attend the General Sessions of the Congress when introduced by a member. They will also be invited to attend the Social Receptions. The Executive Committee reserves the right to invite distinguished persons to any or all the meetings of the Congress. The attendance of Medical Students and others interested in the work of the various Sections or in the general addresses delivered in the Congress, will be permitted, on the recommendation of the Secretary-General or the officers of a Section, on their taking out from the Registration Committee a general ticket of admission, fee one dollar (\$1.00); but such persons cannot take part in the proceedings.

All communications and questions relating to the special business of any Section, must be addressed to the President or one of the Secretaries of that Section. As many details of the Congress and numerous appointments of officers are yet to be completed, other circulars will be issued from time to time, as circumstances may demand.

The following is the list, as at present completed :

EXECUTIVE COMMITTEE OF THE CONGRESS.—Henry H. Smith, M.D., LL.D., *Chairman*; N. S. Davis, M.D., LL.D.; John B. Hamilton, M. D.; E. S. F. Arnold, M.D.; Richard J. Dunglison, M.D., *Secretary*; Abram B. Arnold, M.D.; William T. Briggs, M.D.; DeLaskie Miller, M.D., Ph.D.; James F. Harrison, M.D.; F. H. Terrill, M.D.; William H. Pancoast, M.D.; John H. Callender, M.D.; Alonzo B. Palmer, M.D., LL.D.; J. Lewis Smith, M.D.; E. Williams, M.D.; S. J. Jones, M.D., LL.D.; William H. Daly, M.D.; A. R. Robinson, M.D.; Joseph Jones, M.D.; Albert L. Gihon, M.D.; John P. Gray, M.D., LL.D.; Jonathan Taft, M.D.; Frederick S. Dennis, M.D.; A. Y. P. Garnett, M. D.

PRESIDENTS OF SECTIONS.

General Medicine.—Abram B. Arnold, M.D., Professor of Clinical Medicine, College of Physicians and Surgeons, Baltimore, Maryland.

General Surgery.—William T. Briggs, M.D., Professor of Surgery, University of Nashville, Nashville, Tennessee.

Military and Naval Surgery and Medicine.—Henry H. Smith, M.D., LL.D., Emeritus Professor of Surgery, University of Pennsylvania, and formerly Surgeon-General of Pennsylvania, Philadelphia, Pennsylvania.

Obstetrics.—DeLaskie Miller, M.D., Ph.D., Professor of Obstetrics, Rush Medical College, Chicago, Illinois.

Gynecology.—James F. Harrison, M. D., Professor of Obstetrics, etc., University of Virginia, Charlottesville, Virginia.

Therapeutics and Materia Medica.—F. H. Terrill, M.D., Professor of Therapeutics, University of California, San Francisco, California.

Anatomy.—William H. Pancoast, M.D., Professor of General, Descriptive and Surgical Anatomy, Medico-Chirurgical College, Philadelphia, Pennsylvania.

Physiology.—John H. Callender, M. D., Professor of Physiology and Psychology, University of Nashville, Nashville, Tennessee.

Pathology.—Alonzo B. Palmer, M. D., LL. D., Professor of Pathology, University of Michigan, Ann Arbor, Michigan.

Diseases of Children.—J. Lewis Smith, M. D., Professor of the Diseases of Children, Bellevue Hospital Medical College, New York, New York.

Ophthalmology.—E. Williams, M. D., Professor of Ophthalmology, Miami Medical College, Cincinnati, Ohio.

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EXTRACT.

From an editorial in the *British Medical Journal*, of August 14th, relative to the meeting of the British Medical Association at Brighton, the following is taken: The proceedings were greatly heightened in interest by the attendance of a delegation from the International Medical Congress, to be held in America, at Washington, in September, 1887, to present an invitation to attend the Congress to the members of the British Medical association. There have been some considerable internal dissensions among the organizers of this Congress, but it was very generally felt that this ought not to and could not prevent the invitation from America from receiving a cordial acceptance. This invitation, which was

made at once in the name of the International Medical Congress by its President-elect, and of the American Medical Association by some of its principal officers, was received with that sincere and affectionate cordiality which both the purport of the message and the sources from which it came already assured for it in advance. It lost nothing of dignity or of interest in the weighty and grave words of Dr. N. S. Davis, one of the oldest and most respected members of the profession in America, and one who holds very much the same relation to the American profession as Sir Charles Hastings long held to the profession in Great Britain. Dr. Davis was practically the founder of the American Medical Association, and is its most respected spokesman. The English profession may be sure that they will receive in America a welcome of unlimited hospitality, and of boundless kindness and brotherly affection. They will see there a great country and a great profession, which has sprung up and developed with a rapidity and to an extent which the world has never seen during the life time of many who were present to hear the invitation. In our own country, Paget, Lister, Mac Cormac; In France Charcot, Trélat; and in all the countries of Europe, leading representatives of science have accepted invitations to be enrolled on the list of Vice Presidents. In America, the President of the United States, and the great officers of State, have signified their acceptance of the offices of Patrons of the meeting; and official recognition of the highest kind, such as is naturally due to a great gathering of medical men from all parts of the world, will be accorded to those who accept the invitation to attend the first great International Medical Congress which has ever been held in the United States.

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ORIGINAL COMMUNICATIONS.

PHARYNGEAL AND NASAL SURGERY BY THE GALVANO-CAUTERY, WITH A REPORT OF CASES. *By* W. E. CASSELBERRY, M.D., *Professor of Materia Medica and Therapeutics and of Laryngology and Rhinology, Chicago Medical College.*

[Read before the Chicago Medical Society, September 20.]

New methods of utilizing the galvano-cautery are constantly being devised. Both the battery and electrodes have recently been so improved as to materially extend its field of usefulness, and the discovery of the local anæsthetic, hydrochlorate of cocaine, has been of inestimable benefit in the same direction. Its applications, if properly managed, are attended with little or no pain, it is rapid in action and satisfactorily thorough, oftentimes brilliant in its results. In nasal, pharyngeal and even in laryngeal surgery its utility is particularly manifest. No other means has so augmented the remedial powers of the rhinologist. Pathological conditions of the upper respiratory passages which have long

baffled the most skillful therapeutists are now effectually remedied through the medium of this agent.

The few cases herewith reported are grouped together only because of the similarity in the means of treatment, although each case is of interest from a pathological as well as from a therapeutic point of view.

CASE I.—*Folliculous Pharyngitis with Hypertrophy in the Angles of the Pharynx.*

Doctor — has suffered for an indefinite period from fullness, soreness and pain in the pharyngeal region. He has frequent attacks of acute pharyngitis, and at such periods of exacerbation, his sense of hearing is affected, evidently by extension of the inflammatory process through the Eustachian orifices, a common sequence, and one of especial moment in his case.

Status Præsens.—By reflected light the oro-pharynx is seen to be intensely congested, and three or four isolated follicular enlargements appear on the posterior pharyngeal wall ; but most conspicuously prominent are two enormous hypertrophied follicular masses which occupy the latero-posterior angles of the pharynx. These masses, one on each side, jutted inward and forward from behind the posterior pillar, and were of the thickness of a lead-pencil and about three-fourths of an inch in length, each with the adjoining tonsil presented the appearance of a double tonsil with the parts separated by the posterior palatine fold.

In the normal state, isolated follicular glands, called mucolymphoid follicles, are imbedded in the pharyngeal wall. Each in its simplest form consists of a depression of the mucous membrane lined with its epithelium, and enveloped in a stratum of reticular connective-tissue, entangled in which are innumer-

able lymphoid cells, lymphoid bodies (closed follicles) and lymphatic and other vessels. Morphologically, they are of the same structure as the tonsils, the latter representing large aggregations of such simpler glands. Hypertrophy of these mucolymphoid follicles is the chief pathological condition characterizing folliculous pharyngitis. The same changes take place, which occur in the tonsil when it is in a state of chronic hypertrophy. The inflammatory process leading to cell-proliferation involves every structural element of the gland; its secretion is retained, accumulates and undergoes degeneration, and the follicle thus metamorphosed becomes a center of irritation into which course numerous enlarged blood-vessels, which serve to maintain continued congestion of the parts. Now a whole chain of these mucolymphoid follicles ranges along in each latero-posterior angle of the pharynx, behind the posterior pillar, and it is the hypertrophy of this entire row of glands on each side which is the chief feature in the case now under consideration. Although rarely as enormous as in the present instance, hypertrophy in this particular locality is not uncommon, but it is usually overlooked or regarded as of too little consequence to necessitate treatment of an active nature.

Treatment.—Destruction of the hypertrophied follicular masses was evidently the only effective remedy, and the galvanocautery suggested itself as the means best adapted to the end. I extemporized an electrode for the purpose by uncoiling the wire end of a Flemming moxa-electrode, thus converting the platinum coil into a loop three-fourths of an inch long, with two parallel side wires one-eighth of an inch apart. This was so curved as to be capable of accurately approximating the mass.

It was applied first cold, pressed firmly against the part and

the battery then connected. Instantly the loop became white hot, and produced its slough. By breaking the current, it at once became cool and was ready for withdrawal. It caused very little pain, no hæmorrhage, and but slight subsequent irritation. Several operations were necessary to entirely destroy the growths. They were performed alternately on the two sides, always allowing sufficient interval between operations on the same side for separation of the slough and cicatrization.

The few isolated follicular enlargements on the posterior wall of the pharynx were destroyed in like manner by the Flemming point-electrode.

The result is highly satisfactory. Nearly a year has elapsed since the operations, and the pharynx remains free from hypertrophies.

In this connection I would note that topical applications, in cases of chronic folliculous pharyngitis, of medicaments other than those which affect destruction of the individual growths, are futile and oftentimes worse than useless.

CASE II.—*Folliculous Naso-Pharyngitis, or Adenoid Vegetation* at the vault of the pharynx. Operations by the Galvano-Cautery Ecraseur.

Miss — has complained of catarrhal disease of the upper respiratory passages involving the nose, naso-pharynx and larynx. Purulent nasal and pharyngeal discharges, hawking screatus, cough, hoarseness and a nasal intonation are the chief symptoms. She takes cold easily and frequently, and at such times suffers exacerbation of all symptoms. Examination, in addition to morbid conditions of other parts, revealed numerous hypertrophied follicular masses—so called adenoid vegetations—covering and filling up the vault of the pharynx. Some of these appeared in

the rhinoscopic mirror as pendent pear-shaped bodies; others were sessile, and still others had the appearance of several cockscombs crowded together. There is nothing unusual thus far about the case. Its pathology has been many times described, and I will review it but briefly, as it is to the method of operating that I desire especially to invite attention.

Normally, muco-lymphoid follicles, of the same adenoid structure exactly as those in the pharynx, are imbedded in the mucous and sub-mucous tissues of the naso-pharynx. A number of these are grouped together, forming a compound gland, analogous to the tonsils and known as the pharyngeal tonsil, or the tonsil of Luschka. In the normal state this is scarcely of sufficient size to deserve such appellation, but when hypertrophied, as it frequently is, it bears a striking resemblance to the true tonsil. The tonsil of Luschka and the surrounding isolated muco-lymphoid follicles, like the analogous structures in the oro-pharynx, are exceedingly prone to undergo the hypertrophic process, attaining at times an enormous development. This constitutes one form of post-nasal catarrh, the general symptoms of which are so familiar as to render it unnecessary to enumerate them.

Treatment.—Removal of the hypertrophied masses is the only satisfactory means of relief.

This I first sought to accomplish in the present case with a Loewenberg cutting forceps, an instrument especially designed for the purpose, but the effort resulted unsatisfactorily. Several other methods were tried and abandoned, until finally I found that the object could be attained most easily, and with the least pain and inconvenience to the patient, by means of a galvano-cautery ecraseur.

It was necessary to construct an ecraseur for the case, which I did by first bending a probe to exactly the proper curve to pass behind the *velum palati* and touch the hypertrophied masses, and then making a pair of Flemming's parallel tubes to conform to the same curve, and threading them with platinum wire to form the loop. Withdrawing the soft palate by a Voltolini palate-hook, the naso-pharynx could be thoroughly sprayed with cocaine solution, which not only rendered the operation painless, but entirely prevented the retraction of the velum consequent upon a disposition to gag, so that a perfect rhinoscopic image of the parts could at all times be obtained; that is, I could see exactly what I was doing, even during the snaring.

The patient controlled her own tongue by means of Türk's tongue-depressor. Guided by the rhinoscopic image I introduced the ecraseur and caused it to encircle one of the growths, and at the same time, by tightening the wire somewhat, to grasp it firmly. Then, by connecting the battery, the loop was heated instantly to redness. It was rapidly wound in on the windlass and the vegetation thus severed at its base. There was no pain, no hæmorrhage, and but little subsequent irritation. The operations were repeated weekly for a number of weeks, until the growths were entirely removed.

CASE III.—*Malformation of the Anterior Pillars of the Fauces.*

Mr. — has complained for some years of a sense of constriction in the pharynx, as if his throat were too small, and also of the habit of snoring. The latter is so loud and so frequent as to be a nuisance to his wife and family, and a disturbance to himself, inasmuch as he is often awakened at night by his own noise.

On inspecting the parts I was first impressed by the very

small size of his throat, in comparison with the rather broad dimensions of the individual, including his neck and head.

I have often noted the real narrowness of the pharynx in fleshy persons, and I attribute it to a deposit of adipose material in and between the pharyngeal muscles to such an extent as to encroach on the free space within. This would explain the increase in the severity of Mr. —'s symptoms, as he has gradually grown stouter. The tonsils were somewhat hypertrophied, but what was of still more importance there was found to exist a malformation of the anterior pillars of the fauces, *i. e.*, of the palato-glossal folds. These pillars are formed by the palato-glossal muscles, inclosed by connective-tissue and mucous membrane. Normally the muscle proceeds each from the anterior and lateral portion of the *velum palati*, sweeps over the anterior edge of the tonsil and, extending forward, is attached together with the stylo-glossus muscle to the side of the tongue near its root. In this case the folds originated properly, but increasing in breadth they covered not only the anterior edge of each tonsil, but also a considerable portion of its inner surface, and then, a part only of the fold continuing in the normal pathway forward to the side of the tongue, the larger portion swept *backward* and incorporated itself with the posterior pillar, forming a thick band which continued downward in the latero-posterior angle of the most inferior portion of the pharynx.

In their normal relations the palato-glossal folds assist in drawing the velum forward, and so aid in maintaining sufficient space between it and the post-pharyngeal wall for free and noiseless respiration through the nose.

Their abnormal attachment and development tended to destroy this balance of muscular power, and, as a result, the post-palatine space was so contracted that the air-current pass-

ing to and fro, especially during sleep and in the recumbent posture, caused forcible vibration of the soft palate, or snoring.

Treatment.—I determined to excise the overgrowth of each tonsil, together with the portion of the anterior pillar which covered it, by means of the galvano-cautery ecraseur, and at the same time to sever, as low down as possible, the attachments of the anterior pillars to the pharyngeal wall.

Piano wire No. 5, a steel or tempered iron wire, replaced the usual platinum coil in the ecraseur, because its resiliency, a property totally wanting in platinum, permitted a better adaptation of the loop to the mass. Having sprayed the parts thoroughly with a four per centum cocaine-solution, I first nicked with scissors the muscular band at its attachment to the posterior wall, in order that the wire could catch hold at that point. Then encircling the part by the loop of the ecraseur and connecting the battery, the wire at once was heated to a cherry-red. It was rapidly wound in and the tissue was thus removed.

After cicatrization had occurred a similar operation was performed on the other side.

The result is very satisfactory. The configuration of his pharynx approximates the normal; the sense of constriction has disappeared, and the habit of snoring, although not entirely cured, is much relieved.

CASE IV.—*Membranous Occlusion of the Posterior Nares.*

This case I reported at length in a paper read before the Chicago Medical Society a year ago. I briefly review it, now, because of its special interest in this connection, and to report permanence of cure, and progress in the almost complete alleviation of all catarrhal symptoms which was un hoped for at that time.

Mr. E., age about 40, has suffered during the past thirteen years from a complete obstruction of the left nasal chamber. Most violent paroxysmal headaches, constant soreness on top of the head, vertigo, especially on stooping, and various indescribable cephalic sensations of a most distressing character, have served to render his life miserable.

Thick, viscid and foul muco-purulent crusts accumulated in the left naris and in the naso-pharyngeal space, which he could neither expectorate nor evacuate by "blowing the nose," on account of the impenetrability of the nostril to currents of air. Partial occlusion, also, of the right nasal chamber necessitated frequent and prolonged resource to mouth-breathing, and he has suffered in consequence from atrophic pharyngitis and laryngitis, with painful deglutition, cough, severe asthmatic paroxysms, and the like. The expired air had imparted to it a disgustingly fetid odor. During all these years he has been treated for consumption, bronchitis, catarrh, neuralgia, rheumatism, and other complaints,—a rhinoscopic examination never having been made. He was referred to me by my friend Dr. R. H. Babcock, of this city.

It was only after some days' cleansing of the parts and training of the patient that I could get a perfect rhinoscopic image. It was found that a tense membrane covered the left choana almost completely. Its free edge was thin and sharp and approached so near to the septum that, as seen in the drawing, only a very small chink remained between it and the *septum narium*. The left *ostium tubæ* could not be seen, the membrane evidently lying behind the Eustachian orifice, and so intercepting its image. The choana upon the right, also, was

partially covered by a membrane which extended about half way across the aperture and which was much thicker and less tense than that upon the left side.

Treatment.—The galvano-cautery knife-electrode at once occurred to me as the most effective means of removing these membranous obstructions.

The patient was practiced daily for one week in the use of the rhinoscope and in the introduction of instruments. A flexible silver probe was bent by numerous trials to exactly the proper curve to pass readily, through the mouth and nasopharynx, into the chink on the left side and to pick up the edge of the membrane, and then a straight knife-electrode was made to conform to the same curve.

First Operation.—The patient held his own tongue by means of Türck's tongue-depressor. I introduced the knife-end of the electrode, one-half inch long, through the chink and pressed its edge against the membrane, backward. The current was made at the battery, the knife end became in an instant red hot and the membrane was incised without bleeding and without sufficient pain to cause the patient to wince. In another instant the current was broken and the electrode cooled in a few seconds and was withdrawn.

After incision the membrane, which had been very tense at its edge, retracted from each side, leaving a surprisingly large opening.

The delight of the patient, when he discovered that he could again breathe through that nostril, was a pleasure to behold, and from that moment he has been completely relieved of all cephalic symptoms, including the left sided deafness.

I found the floor of the nose, the septum and the turbinated bodies thickly incrustated with horribly fetid cheesy masses, the accumulated, decomposed and desiccated secretions of years.

These were so firmly adherent that they could be detached only by means of a probe during a period extending over several days.

Their presence, for so many years, had served to excite a bad naso-pharyngeal catarrh of an atrophic type, which at that time I had little hope of benefiting, but as an illustration of the recuperative powers of nature, even this complication, in the absence of the original cause and under favorable treatment extending over several months, has so far improved as to occasion, practically, no annoyance.

Additional operations, to the number of seven or eight, were performed in exactly the same manner, now on one side and then on the other, until both posterior nares were widely patent and in an approximately natural condition.

These are but a few of many cases wherein I have found the galvano-cautery of the utmost utility. Doubtless the several operations could have been performed by other means, but not without procedures so much more formidable that both the surgeon and patient would have preferred to forego operation.

Certainly this agent can be abused, and a word of caution is not unnecessary in this respect. There is reason to believe that injurious effects have already been produced by it, especially in the nasal regions. Morell Mackenzie warns some of his younger *confrères*, "that it is unnecessary, where no inconvenience is felt, to restore geometrical symmetry to the turbinated bodies or to invest the lining membrane of the nose with artistic merit," and he fears "that the nasal passages have occasionally been 'cleared' with a zeal and energy worthy of the industrious backwoodsman." But while deprecating unnecessary aggression in these regions, he at the same time asserts that there are many cases that can only be cured by active treatment. Accurate diagnosis, precise indications for its use,

and a certain amount of skill on the part of the operator, are essentials to the judicious employment of the galvano-cautery.

The battery and electrodes which I employ, and which I take pleasure in exhibiting to the Society, are manufactured by Otto Flemming, of Philadelphia, from suggestions furnished by Carl Seiler. The battery has advantages over any other that I have seen. Not the least of these is the arrangement by which the plates may be immersed and withdrawn from the fluid by means of a pedal easily manipulated by one foot. Electrodes can be devised and altered from the standard ones to suit individual cases.

70 Monroe Street.

FAVUS—A CLINICAL LECTURE. *By* HENRY J. REYNOLDS, M. D., *Professor of Dermatology, College of Physicians and Surgeons, Chicago.*

[Reported by B. VAN SWERINGEN.]

GENTLEMEN:

I wish today to call your attention to the study of a disease which belongs to a different class from those which we have recently been considering. It belongs to the class known as "Parasitic Diseases" of the skin. We have, as most of you are aware, two principal forms of parasite giving rise to the diseases of this class, viz.: "animal" and "vegetable." The various forms of pediculosis and scabies constitute the diseases caused by the animal parasite. Arising from vegetable origin we have three forms of disease, the manifestations of each being somewhat different, as likewise, the vegetable parasite, fungus or growth giving rise to them. They are "tinea versicolor" (a case of which you saw a few days ago), "tinea trichophytina," or ringworm (under which head three different manifestations, differing only on account of location,

are embraced, viz.: *tinea cincinata*, or ringworm of the non-hairy skin; *tinea barbae*, *tinea sycosis*, or barbers' itch, which is the same thing, as it occurs in the bearded region, and *tinea tonsurans*, which is also the same thing only occurring in the scalp), and "*tinea favosa*," or "*favus*." It is to the last named disease that I will now confine my remarks.

Before examining the two patients before you, which are both typical cases of *favus*, let me ask that you first get a good general idea of the symptoms, characteristics, and clinical history of the disease, without which it would be impossible to examine and study the disease, as it manifests itself in these or any other cases, intelligently.

Being a parasitic disease, it of course results from contagion; its contagious character may then be mentioned as the first characteristic of the disease.

It is always a scalp disease, though the non-hairy skin, and even the nails, may occasionally be coincidentally affected, as in the plate I now show you.

It is a comparatively rare disease, occurring with about the same frequency as *lupus erythematosus*, and, like that disease, is much more common in Europe than in this country.

The disease is first seen as one or several small yellow spots beneath or within the epidermis.

In from two to four weeks these spots enlarge and form pea-sized, cup-shaped, yellow, sulphur-colored crusts, each penetrated by one or more hairs.

These cup-shaped crusts, now, upon removal, leave a correspondingly depressed, moist, reddened surface.

As the disease advances these lesions, which are as yet discrete, become confluent and fused into a general, continu-

ous mass of yellow, sulphur-colored crusting; though here and there, especially near the margins the cup-shaped character may usually be observed.

The condition, as I now describe it, represents the disease as usually first seen by the physician, and may, if of very long standing, involve almost the entire scalp, or may be confined to patches here and there.

The crusts in this disease always have their own peculiar consistence, being more friable and brittle, perhaps, than the crusts of any other form of skin disease, breaking down almost like cheese.

There is usually not much inflammatory trouble, though the skin is usually hyperaemic and pus may be formed: the crusting, however, as demonstrated by the microscope, is largely composed of the fungous growth rather than of dried pus or other inflammatory product.

The hairs, including the follicles, being invaded by the parasitic growth, now become loose, lustreless and brittle.

If the disease continue, the follicles, from the irritation and inflammatory action, become in time completely destroyed and the hairs are not reproduced, leaving smooth, partly bare places sometimes, here and there, as a relic of the disease, it having then undergone, to some extent, spontaneous cure in such places.

The disease may be limited to one or two small patches or it may involve almost the entire scalp, though there is no tendency to symmetrical distribution as in seborrhœa, psoriasis, etc.

It is a very chronic affection, lasting sometimes for a great many years.

It generally begins in childhood.

The subjective sensation is usually that of mild or moderate itching.

The crusts may be all removed by careful washing and cleansing, leaving a surface apparently almost free from disease, but under favorable circumstances—heat and moisture—they will be very rapidly reproduced; giving in a very few weeks the same appearance as before.

The affected part has a characteristic odor, described as resembling the smell of mice.

The disease may, lastly, be characterized by its transmissibility to or from numerous lower animals, as cats, dogs, rabbits, mice, etc.

The disease is of course not a constitutional one, but purely local.

CASE I.—The history of this boy's case is substantially as follows: He is eleven years of age, and has had the disease for seven years. Otherwise he is apparently healthy. He gives us no history of contagion as a cause of the disease in his case, but upon questioning him we find that a little brother has a similar spot on his scalp, which would tend to show the first characteristic referred to, viz., contagion.

CASE II.—In the history of this case there is nothing of particular interest, more than that he is twenty-five years of age, and has been afflicted with the disease for seventeen years. He, like the boy, has been treated more or less by numerous physicians during the entire career of the disease, without receiving any permanent benefit; this fact tending to show the very stubborn and chronic character of the disease.

The patients will now pass around among you, and you will please observe the various points which I have enumerated as characteristic of favus. You will first readily observe that

the disease is confined to the scalp; but the earlier manifestations of the disease you will be unable to see in these cases of so long standing. Less than two weeks ago the crusts, by treatment, were almost entirely removed, but, in order that you might see and study the disease in its typical, untreated state, I have allowed them to re-accumulate undisturbed. Toward the margin, where the lesions are more or less discrete, may be seen some of the characteristic cup-shaped crusts. You will observe that the crusting is yellowish or sulphur-colored, that it is very brittle, differing in the latter respect from crusting composed of a purely inflammatory product; and that when the crust is removed we do not find the active inflammatory condition of skin characteristic of truly inflammatory diseases, as eczema, for instance. I will next call your attention to the condition of the hairs in these cases. You will observe that they are dry and lustreless, loose, brittle, and broken off. You will observe in Case II a partly bald, smooth patch. This represents a place where the disease has undergone spontaneous cure, the follicles having become so involved in the process that the hairs have fallen out and were not reproduced. You will find, if you direct your attention to the odor of the affected parts, that you get the characteristic so-called smell of mice. We have stated that children were more susceptible to the disease, and we find in both of these cases that the disease was contracted in childhood. As regards subjective sensation, we find that while there is some itching in these cases it is of a very mild or insignificant character. Thus we find in these cases most of the symptoms referred to as characteristic of favus.

Etiology.—As the disease is a parasitic one, it is like all the other diseases of this class, whether of animal or vegetable origin, caused by the development of a parasite. The

parasite in this, as in all the vegetable parasitic diseases, is a vegetable organism, fungus or growth, and is received and communicated by contact; the disease being therefore a contagious one. As previously stated, the disease is met with in certain of the lower animals, and may therefore be derived from this source. It is likewise, of course, communicable from one person to another, the only requisite being a favorable soil for the development of the fungus when deposited by contact; the most favorable site being the scalp. The disease may be communicated through the medium of certain articles upon which some of the parasitic growth has accidentally or otherwise been deposited, as articles of clothing, towels, combs and brushes, etc. Like all other diseases, some individuals are more susceptible to it than others. It is usually met with among children, especially the uncleanly; adults being peculiarly exempt from it.

Pathology.—The microscopical organisms or vegetable growth to which the disease is due, upon being deposited upon the skin, gains lodgment beneath some of the superficial layers of the epidermis, particularly in the depression around the roots of the hairs. It then, as it grows and multiplies, burrows in all directions, down into the follicles, into the hair bulbs, and even the tissues of the shaft of the hair for a short distance from the scalp, though not to the same extent as the similar parasite of *tinea tonsurans*. They soon become so aggregated as to form a small yellow spot with a thin covering in the horny layer. This soon increases in size and forms the characteristic yellow cup-shaped crust, and is, of course, composed almost entirely of the vegetable growth. The nutrition of the hair is thus interfered with and in due time the hair loses its lustre, becomes brittle,

the bulb atrophies, loosens, and the hair falls out ; it may grow in again, but if the disease continue long enough the follicle becomes destroyed and the hair is not reproduced and the partial baldness referred to is thus brought about.

In the epidermis the parasite works very superficially, but the deep or true skin, though not invaded by the growth, is in an irritable, somewhat inflammatory condition. Further reference will be made to the character of the parasite at the close of the lecture, when you may have an opportunity of studying it under the microscope.

Diagnosis.—The recognition of a typical case of favus, or in other words a case wherein most of the symptoms and characteristics just considered are present, is a matter of no great difficulty, providing we know and are familiar with what those characteristics of favus are. The disease is not always typical, however ; for instance, if the patient when first seen has been under treatment or has given the scalp ordinary good care in the way of washing, etc., the crusts may be moderate or even absent, and it would then be very difficult to make a diagnosis from the appearance of the part. In this case, the history given by the patient of the previous character and behavior of the scalp, as regards crusting, the color of the crusts, etc., would arouse suspicions of favus. In any event, the use of the microscope would settle the question. The affections presenting the most striking resemblance are eczema, tinea tonsurans or ringworm of the scalp, and psoriasis.

We have the parasitic or contagious origin in favus. In eczema, though many may have it at the same time, it is not propagated from one person to another. We have much greater irritation, more serous exudation and itching in eczema

than in favus. The crusts, though sometimes inclined to be yellow in eczema, never have the bright yellow of favus, but rather a dirty yellow. The crusts in eczema never have the brittle quality that is characteristic of favus; they never have the umbilicated condition. In eczema the disease is not so liable to be continuously confined to the same patch as in favus, but will usually be more generalized and quite probably show an irritated, red, eczematous condition in the face at some time during the career of the disease. The hairs in eczema do not show the brittle, lustreless quality, with a tendency to fall out, that is characteristic of favus. As to the odor of the part, there may be a very offensive odor in eczema under certain conditions, but it is of an entirely different character from that previously referred to as characteristic of favus. When uncertainty exists, or in any event, the diagnosis can always be very readily made by the use of the microscope, to which we will refer at the close of the lecture.

In tinea tonsurans we do not have the yellow crusts, in fact we do not have crusts at all, but scales. The disease spreads centrifugally by peripheral extension, etc.

I have seen psoriasis of the scalp diagnosed as favus. In this disease, though the scales may at times accumulate into a crust-like mass with a dirty yellowish color, there need rarely be much trouble in discriminating one from the other. Even without the microscope the scaly or crusty accumulations of psoriasis never have the sulphur-yellow color, they are never cup-shaped, they are more general, almost always involving various portions of the non-hairy integument. The hair retains its normal lustre, is not brittle, broken off and loose, etc. If psoriasis have lasted for years, it will generally give a history of having been, at some time during its career, entirely well, which is never the case in favus.

Treatment.—The disease being dependent upon a parasitic or fungous growth, it naturally follows that remedies which destroy the growth will cure the disease, providing they be applied so as to reach it; but this is the great and only difficulty in treating favus. The parasitic growth being a very small, microscopical one, it penetrates to the bottom of the hair-follicles and even into the hair structure itself, and is therefore very difficult to reach with the remedy. The class of remedies to be used is that known as parasitocides, or remedies capable of destroying vegetable organisms, and it matters not which of the long list be used, though it is probable that certain combinations penetrate to the deeper parts more readily than others and would therefore be preferable.

It is necessary first, as in treating every other diseased surface, to remove the crusting, which can be very readily accomplished by frequent anointing and washing with soap and hot water. This being accomplished, we know now that if the hairs be removed—which are usually loose in the diseased patch—every place invaded by the growth can readily be reached by the local application. This procedure is undoubtedly not always necessary, but in stubborn, old standing cases, like those before you, it will be found a more satisfactory way of treating the disease. In this way the cure is certain, while to treat without removing the hairs is always tedious and uncertain. Whether epilation be resorted to or not, the remedy must be thoroughly rubbed in day after day for a month or two at a time. It is well then to discontinue for a week or so to see if the crusting be reproduced, and to what extent, and if any disease be found remaining the process must be again repeated in like manner till the crusts cease to reappear.

In these cases we will order that the hair be shingled and that the parts be anointed with some oleaginous preparation—of which there is nothing better than lard—three times a day, and washed with soap and hot water once a day. Then in a few days, as soon as well freed from crusts, we will have the hairs removed. This should be done by the physician or a competent assistant. We will then apply three times a day a solution of ten grains of bichloride of mercury in an ounce of chloroform. This we will continue as previously suggested for a month or so, etc.

Prognosis.—The prognosis in a case treated in this way is always good, providing the treatment be rigidly and carefully persisted in for a sufficient length of time, which may be many months.

Let us now study briefly this vegetable parasite, or fungous growth under the microscope, by which means we are enabled not only to arrive at a positive diagnosis, but to demonstrate what we have said of the pathology of the disease. I now take, as you see, a very small piece of the crust from this patient's head, moisten it on the slide with a little water, put a cover glass over it, and place it under a one-sixth objective. The fungus can now be seen in great abundance. You will now notice first, as you examine the specimen, small round, globular or oblong bodies. You may also see small elongated tubular bodies, some of which are chain-like in appearance, of a similar diameter. The small round bodies which you see in great numbers are what are termed spores; they are not exactly uniform in size, and vary from about $\frac{1}{1000}$ to $\frac{1}{500}$ of an inch in diameter, showing therefore, as you can see, about one-third to one-half the diameter of a red blood corpuscle as seen under the same

power. The tubular, thread-like elongations you see are termed mycelia, and the chain-like bodies are either spores linked together, or mycelia traversed by transverse septa, which in all probability ultimately divide into spores.

A CASE OF ACTINOMYCOSIS HOMINIS. *By* DR. A. SCHIRMER, Chicago.

[Read before the Chicago Medical Society.]

Frank P., a Pole, 25 years old, married, is at present employed in a lumber yard. He has been a resident of the United States five years. In Poland he was employed as a farm laborer during the summer, and in winter he attended to barn work. There is no history of any hereditary disease in his family.

When 18 years old, while chopping wood, he received a slight incised wound on the chin. The hæmorrhage from it was slight and no attention was paid to the matter. Shortly afterward some swelling was noticed on both sides of the lower jaw. The swelling on the left side disappeared in a few days, but on the right it remained. Three months after the injury he was obliged to consult a physician on account of the severe pain in the injured part. A clear fluid was injected into the swelling several times, in each instance followed by severe pain. Shortly after the injections the skin turned white, and in a few days opened, discharging a little pus. The fistula remained open and later on the discharge increased. Since this time the patient has been unable to completely open his mouth. Three years ago, on account of a severe cough, he was unable to work for one week, but from that time on he was employed until last May.

In July last, I was called to see the patient at his home. He then complained of severe pains in his left side and stiffness of the neck, so that he was unable to move his head. He was feverish, his pulse was frequent and his temperature was elevated. He had no appetite, and he coughed some. Two days later the fistula was enlarged, its walls dissected out, and some pieces of necrosed bone were removed. At the same time an abscess on the left side of neck, midway between the shoulder and the chin, was opened. It discharged about a tablespoonful of sero-pus, in which floated many sand-like grayish-yellow granules. The opening into the abscess was enlarged and a digital examination proved it to be superficial. The patient could open his mouth better after this operation. Ten days later an abscess on the opposite side of the neck was opened; it discharged about two ounces of pus, somewhat thicker than in the former instance. It also contained granules, but smaller in size than those in the first abscess. Since I first saw him the pain, cough and expectoration have become gradually worse. His appetite has failed, and he does not sleep well. During the last ten days he has complained of severe pains in his right arm.

When I first saw the patient I suspected actinomycosis, and preserved the contents of the abscess. Microscopic examination confirmed my diagnosis, which was concurred in by Professor C. Fenger, who also demonstrated the presence of actinomyces in specimens of the abscess-contents sent him. The fungus has also been observed in the sputum of this patient.

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EDITORIAL.

ASEPSIS VERSUS ANTISEPSIS.

The controversy now going on between the advocates of simple "cleanliness" on the one hand, and, on the other, of those who rely upon such antiseptics as corrosive sublimate, carbolic acid and iodoform, continues to grow stronger as time passes. It becomes even acrimonious. Like many other discussions of a similar nature, a proper definition of the terms used, and a comparison of the points of similarity in the two methods, would reveal the fact that both are in harmony with well established biological facts.

Cleanliness is defined by Worcester to be "freedom from dirt." If we turn to "dirt" we find it defined as "filth; mud; mire; anything that renders unclean." It is evident, from even a superficial acquaintance with the discussion, that "cleanliness" is not used in the common acceptation of the term. It is rather difficult to determine in a given case just what kind of "dirt" the reporter thinks is excluded by "cleanliness"; in one case it is germs, bacteria, etc., with their potent and multiplying power; in another, "septic matter"; in a third, "dead matter," in fact any substance, organic or inorganic, may come under this comprehensive term. The great ovarioto-mist, Lawson Tait, if correctly reported by a correspondent, does not class bacilli as dirt, because he says he would gladly use them as a dressing if they were sufficiently dry and absorbent. It ought to be possible for him to secure some of the *bacillus anthracis* sufficiently desiccated for his purpose. On

the other hand, the antiseptacists pin their faith to spray, solutions, and other means of destroying the omnipresent germ. They look upon the first class as men too conservative to ever get a new idea, and accuse them of secretly holding to the "tape-worm diathesis" of the fathers.

An examination of the two methods suggests the secret of the success of each. In the first instance, the germ is excluded, and is analogous to the experiments of Tyndall and Pasteur, in which the former exposed putrescible fluids in chambers, the sides and bottoms of which were coated with glycerine and the contained air had deposited its foreign matter; the latter, who obtained similar conditions in the catacombs of Paris and the summit of the Righi Kulm. In both cases organic matter was exposed to "clean" air without any infection, as has been proved over and over again. Similar conditions might be obtained by having an operating room constructed with only one opening for the ingress of air. By suitable filtering apparatus the air could be deprived of all foreign matter, and that already in the room would in time deposit all its floating matter, which could be retained by a sticky coating applied to the walls and floors. All instruments could be disinfected by heat, and the water used for preparing the operator, the patient, assistants, and for irrigating the wound could be sterilized by discontinuous heating. The principle of "cleanliness" here laid down ought to secure absolute immunity from wound infection. Whether it is practicable in application remains to be seen.

The principal fact thus far brought out in the discussion is that wounds may be exposed to *chemically pure* air and water with impunity. Dirty water and impure air may be rendered innocuous by spray of carbolic acid and corrosive sublimate. The successes by each method are about equal when both are

in competent hands. The latter method is the easier of application. The term "cleanliness" might be dropped and "asepsis" substituted to designate those methods which endeavor to secure absence of germs. "Antisepsis" might be employed in designating those methods which have for their object the destruction of germs supposed to be already in or about a wound. The term "aseptic dressing" might be applied to dressings which are sterilized, and which protect the wound mechanically. The term "antiseptic dressing" might be used to designate dressings which are capable of destroying germs, and which protect both mechanically and chemically.

ACTINOMYCOSIS.

In another column appears the report of a case of this comparatively rare disease in the human subject. The number of cases thus far reported is about thirty-six; the great majority having occurred in Germans of the peasant class. It would seem as if their habits peculiarly exposed them to infection from this fungus. This last case, it will be noted, is a German, and, from the history of the case, seems to have contracted the disease in his native land. A very interesting point in the history is the length of time, seven years, that has elapsed since the primary infection, and the manner in which the fungus gained access to the tissues. Two cases reported during the past year bear directly on this point: the first, by I. Israel (*Central blat. für Med. Wissensch.*), is that of a coachman from Russia, who used the hay-loft of his barn as a bed-chamber, and often drank from his horses' bucket. He first complained of a severe pain in the left side, and shortly thereafter an abscess appeared, the pus of which contained a large

number of actinomyces. An examination of the lungs after death revealed a large mass of actinomyces in the anterior inferior portion of upper lobe of the left lung. In the centre of this mass a piece of a tooth was found. Israel advances the hypothesis that lung-actinomycosis is brought about by the aspiration of the infectious material from the mouth, and that sometimes this fungus is developed on the teeth.

The second case, by Professor Soltmann (*Jahrb. für Kinderhke, 1886*), was a boy who had swallowed an ear of fox-grass ("*tauben Gerste*") which after a few days was discharged in the contents of a small abscess at the angle of the right scapula. Some six months after this accident the boy presented another swelling to the right of the vertebra which contained pus and actinomyces. Soltmann regards this as confirming Ponfick's view that plants may act as the vehicle of infection.

While the history of Dr. Schirmer's case is imperfect, yet in the light of the above facts, the slight wound of the chin may be regarded as the source of infection, which may have occurred at the time of its reception or later.

FOREIGN CORRESPONDENCE.

CLINICAL NOTES FROM VIENNA.

To the Editors of the CHICAGO MEDICAL JOURNAL AND EXAMINER.

Gentlemen:

In my last letter to the JOURNAL AND EXAMINER, I promised to give, in the next, some surgical notes, taken at the clinic of Professor Ghiersch, in Leipzig; but the material from which to draw has so increased on my hands, that I have concluded to give notes of a single case only, from that clinic, and to draw also from the lectures of Professor C. Braun. The patient was a woman 68 years old, thin in flesh, but prior to the present attack, four months ago, in tolerably good health.

At that date she began to complain of a burning sensation in her left foot and toes. Soon after, a blue spot appeared on the top of the great toe, which became extremely painful, then turned black. The same process rapidly extended upward until the foot was gangrenous as far as the ankle-joint. Professor Ghiersch gave a short *résumé* of the pathology of this form of gangrene, saying that it was brought on by an atheromatous condition of the blood-vessels, which, as they approached the lower extremities, become smaller and more easily obliterated. The force then required to carry on the circulation being greater, the two combined influences rendered the feet and toes eminently predisposed to this disease. As an application, he used two parts of starch to one of iodoform, sprinkled over the surface, to which he applied cloths wet

in one part of alcohol, two parts of water and (five per cent. of the whole) carbolic acid. He reviewed the line of treatment formerly pursued, that is, to let the parts alone until a perfect line of demarcation was formed by nature. "By that time," he remarked, "your patient will be worn out."

Then, again, the nearer you can get to the centre of the circulation, the more potent will be the heart's action to carry it on; so, in this case, instead of waiting for a line of demarcation between sound and diseased tissues, he amputated at the union of the lower and middle third of the femur.

I was much interested in this old lady's case, and a physician wrote me a month later that the patient had entirely recovered.

June 1, 1886. The first patient presented today was a woman, 47 years old, from whom Professor Braun had removed with the galvano-cautery the entire cervical portion of the womb, four years ago, on account of cancerous infiltration. The patient rapidly improved, and everything went on well until four months ago, when she began to suffer from dysmenorrhœa, and for the last two months her catamenia have failed entirely to appear. Above the *symphysis pubis* a tumor could be felt as large as a small cocoanut. An attempt to introduce a sound into the womb entirely failed. There was no cervix, as that had been cut away. A small depressed point in the centre of the cicatricial tissue showed where the uterine orifice had previously existed, but which was now completely obliterated. A long, narrow bistoury was plunged in at this point as nearly as possible in a line with the axis of the tumor that was to be felt above the pubis. A large quantity of dark grumous blood followed this incision. A sound was now introduced into the womb to a depth of six inches. The opening was enlarged by incisions made antero-posteriorly and later-

ally; the womb was well washed out with a 1 to 1000 solution of thymol; an iodoform suppository was introduced into the uterine cavity; the vaginal vault was sprinkled over with iodoform; the vagina was tamponed with iodoform gauze and the patient was put to bed. Professor Braun remarked, in connection with this case, that all these antiseptic precautions were absolutely necessary, as it was in just this class of cases that we might expect putrid changes to occur in the uterine cavity unless these precautionary measures were faithfully carried out. He then gave a general outline of his very extensive experience in the management of cancer of the womb. His deductions led him to lay down the following general rules:

1st.—That the *total* extirpation of the womb for malignant disease had proved a failure; that if the cancerous infiltration had extended so far that one could not remove it by the removal of the cervix, on account of the great vascularity of the parts and their numerous lymphatic glands, one might be assured that even after extirpation of the entire womb there would still remain behind in its connective tissue the nidus from which would soon spring up new cancerous nodules that would destroy the patient.

2d.—For the removal of the cervical portion of the womb he prefers the galvano-cautery. While it may be followed occasionally by the same accident that befell this patient, viz., a cicatricial closure of the *os uteri*, the disease is less liable to recur when thus operated upon than when the knife is used.

He cited in this connection the history of several patients upon whom he had operated a quarter of a century ago and who were still alive and well. This brought to my mind a lecture I heard him deliver eight years ago, in which he dwelt at length on the difficulties connected with an *early* diagnosis of cancer

of the cervix. He said at that time that he was in the habit of cutting out a piece of the suspected tissue and sending it to a microscopist for his opinion. Not being always satisfied with the diagnoses given, he took to sending specimens to two different men, and often got two opinions; so that he had lost faith even in the infallibility of the microscope, and he believed that there were a large number of cases in which a positive diagnosis was impossible in the *earlier* stages of the disease.

The next patient was a woman who had just entered the hospital and who had miscarried at her own house ten days before, in the third month of pregnancy. Two days after, flooding began and she lost a large amount of blood. She was put in Sims' position, a speculum was introduced, the posterior lip of the womb was caught with Bozeman's forceps and brought well down. A large semi-blunt curette was introduced into the womb and the after-birth scraped away. Professor Braun prefers this mode of operating to the introduction of the finger, as he claims one can operate through a narrower os, and do less violence to the womb. The womb was washed out with thymol, as before described; a suppository of iodoform was placed within the os; the vagina was tamponed with iodoform gauze and the patient was sent to bed. This tampon is usually removed at the end of twenty-four hours, and if the patient has no increase of temperature no other treatment is instituted.

The next patient was one who had been delivered four days before at full term, and the labour was natural. The after-birth followed soon after the child. Twelve hours ago she had a severe chill and her temperature was now 40° C. She was placed in Sims' position; a speculum was introduced; the anterior lip of the womb was caught with a tenaculum, a large blunt curette introduced and a considerable portion of the

chorion curetted away. He dwelt at length upon the proper manner of performing this operation.

The curette is first carried well up to the fundus, and is then withdrawn with one long sweep until it emerges from the external os. In this way one is enabled to determine at what portion of the uterine cavity any abnormal substance may be located, and so know where to direct efforts for its removal. This woman's womb was washed out with a solution of bichloride of mercury, 1 to 4000, followed immediately by the thymol solution, 1 to 1000.

The iodoform suppository was used as before described; the vagina was tamponed with iodoform gauze and the woman sent to her bed. Professor Braun predicted that within eighteen hours this woman's temperature would be normal, and that she would make a good recovery. In speaking of the use of intra-uterine injections in general, after childbirth or miscarriage, Professor Braun said that where he used them as a precautionary measure simply, that is after all operative procedures that involved the introduction of the hand or any instrument into the womb, he washed out the uterine cavity with thymol.

On the other hand, if he has to do with a case where there was a decided increase of temperature, showing that a septic process was already beginning, the thymol was too weak an agent to depend on as a destroyer of the existing germs, he uses first the stronger remedy, 1 to 4000 of the bichloride of mercury, and then follows it with the thymol to wash away the mercury to prevent *its* poisoning the patient. He said: "We have used this treatment in this hospital eighty-four times in the last six months, and while many condemn it altogether, or only use it with great reserve, I only regret that I have not used it earlier and oftener. The only patient we

have lost in this hospital during that time from a puerperal process, I believe, died because we postponed our intra-uterine treatment too long."

"When I look over an experience of thirty years and remember the number of valuable lives I have seen sacrificed to what we jumble together and call *child-bed fever*, and reflect also how worthless most of the remedies for the same have proved in my hands, I am like the drowning man, ready to catch at a straw."

Hence the great interest with which I have studied this subject of their local treatment by means of intra-uterine injections.

Of the men who shall read this article, how do three-fourths treat child-bed processes? Possibly they wash out the vagina themselves or very likely order some old lady to do it. For this purpose an old Davidson syringe is called into use which no process short of its entire destruction could render aseptic. With this a solution of carbolic acid of very indefinite strength is used, generally with the solution a considerable quantity of air is thrown into the genital tract.

But their great agent in these crises is *quinine*. Though such men as Credé, and in fact a majority of the best observers here in Germany, think it of no use, in America we are now suffering from a quinine craze and we use it for everything. Or perhaps, following the directions of Professor Fordyce Barker, they put their patient on large doses of opium and an arterial sedative under the impression that they have as a part of the morbid process either a general or circumscribed peritonitis.

This part of their treatment, though rational enough in its place, can only fulfill one or two indications, viz., to relieve pain and lessen the peristaltic action of the bowels, and thus put the peritoneum at rest.

But in the matter of a more remote cause, where does this peritonitis come from? From a morbid process going out either from the vagina or uterus.

Is it not, then, at least a rational idea, when a patient first begins to manifest symptoms of disease, to treat locally the *centre* from which an endless chain of morbid processes may spread to the remotest parts of the system. It is to the *abuse* of the local treatment of the womb in the child-bearing woman that we probably owe a large part of the opposition to this measure.

Some twelve years ago Professor Winckel and other believers in the germ-theory, as a cause of most morbid processes, conceived the idea that if every woman's womb after confinement were washed out with a disinfecting solution, all puerperal diseases would be prevented. Every woman who bore a child was subjected to this operation. Midwives were instructed in the procedure and *Gebärmutterausspülungen* became the rage.

Experience soon demonstrated the fact that this treatment was being sadly overdone; in fact, that its misuse was worse than its entire omission. The practical question for us to consider is this: Under what circumstances should we use intra-uterine injections after child-birth? By a careful examination of the German literature of this subject during the last five years, including experiments made in the management of over 7,000 cases in the obstetrical wards of Professor Breisky, at Prague, the following deductions can be pretty safely depended upon, or at least they are the rules that now guide a majority of the men, who have charge of the different lying-in hospitals of Germany. First, vaginal injections should be used in every case *previous* to the birth of the child if the woman has a decided increase of temperature. After the birth of the child

the *womb* itself should be irrigated. In the "*toucher Curs*" in Carl Braun's wards, where four men examine each patient, vaginal injections are used if the woman be taken in labour within twenty-four hours after the last examination. No uterine injection is used if she has no increase of temperature. Thorough uterine irrigation should be used (one to three quarts of the fluid) in every case where an operative procedure is found necessary, whether that be the introduction of the hand or any instrument into the uterine cavity. It should be used in every case where a considerable increase of temperature occurs, unless such increase can be traced directly and positively to some cause outside of the genital tract.

These injections should be used only with an irrigator, and should be used *promptly*; for after the patient has become contaminated by the transmission of the effete matter to distant parts of body, local treatment will be of no avail. The only case of child-bed fever lost in Carl Braun's wards during the last school year was one in which the injection was too long delayed.

The next point is, how are they to be used?

Dr. Fischel, who reports Professor Breisky's cases, in a long article in the 20th volume of the "*Archiv. für Gynäkologie*," says that one of the greatest dangers in the use of an intra-uterine injection is the liability to infect the womb by carrying poisonous matter with the tube from the vagina into the uterine cavity. The first step in the operation, he says, is to thoroughly disinfect the *vagina* by washing it out with a 5 per centum solution of carbolic acid. He lays it down as a fundamental fact that one cannot tell from what point either in the vagina or the womb it is from which the poisonous matters are being absorbed which are producing the mischief.

A few wounds are likely to exist at both points. To protect these wounded surfaces from infection, nature pours out upon their surfaces a layer of plastic lymph, so that effete matters are not easily absorbed; and if this were not the case, a majority of women would die in child-bed. Hence he says that very often a woman is doing well and a vaginal injection is used for cleanliness and at once she is taken with a chill and has a high fever for a time. This is because there has been washed away the dam that has protected her from infection.

It follows therefore that when injections, either vaginal or uterine, are used they must be used with great *thoroughness*. After the vagina is thoroughly washed out, Breisky examines its surface very carefully and touches all denuded points with the tincture of iodine; though Carl Braun does not use this.

The idea is that by this means there is left a surface more healthy as well as less liable to absorb the foul secretions from the womb and vagina.

The author dwells at some length on the subject of permanent irrigation of the vagina and womb, and, after a long trial of the same, has abandoned its use.

I find myself in a field so wide that its full survey is impossible in the space to be occupied in the JOURNAL AND EXAMINER, and I will close with a few words as to the agents best to be used in uterine injections. Braun's ideas on this subject can be gleaned from what I have already written, except that he considers any solution of carbolic acid stronger than two per centum a dangerous remedy if the woman has had a child at full term.

On the other hand, Breisky uses the carbolic acid solution

of five per centum strength. This he uses at first, and after that a solution of chloride of lime.

Under no circumstances is the use of these remedies to be entrusted to a midwife or a nurse.

Glass tubes long and curved are the kind used here to irrigate the womb at full term, as they can be easily disinfected. In the lying-in wards here in Vienna the irrigators are also made of glass. The injections are not warmed but used at the temperature of the room.

Where injections are used in cases of miscarriage, where of course the os is comparatively narrow, Bozeman's or Dr. Breus's intra-uterine syringes are used. If the womb in the latter class of cases needs to be dilated to get away an afterbirth, Braun prefers decidedly the Hegar dilator to the sponge or other forms of tent. The Barnes dilator, he remarked, is a nice thing to keep in your case, but it will always fail you when you want to use it.

Very truly yours,

W. S. CALDWELL.

Vienna, August 11, 1886.

SOCIETY REPORTS.

CHICAGO MEDICAL SOCIETY.

Regular Meeting, August 16, 1886.—E. J. DOERING, M.D.,
PRESIDENT, in the chair.

PROFESSOR F. E. WAXHAM presented a membranous cast of the trachea and larynx. The specimen presented was removed from a child nine years old. This cast had remained in the larynx and trachea for several months. The patient was brought to him from Minnesota by Dr. McDavitt, of Winona. The history is as follows: The child claims that in April she swallowed a hedge thorn whilst away from home. She was at once taken with suffocation, and twenty-four hours afterwards was operated upon when at the point of death, by Dr. McDavitt, who performed tracheotomy. The child was unable to breathe through the natural passages after the introduction of the tracheotomy-tube, although many attempts were made to remove it. It seemed impossible for the child to get a breath through the natural passages when she was brought to Professor Waxham. Upon laryngoscopic examination the larynx seemed to be closed, but digital examination revealed a very small opening. Into this opening a small sound was passed, and this was followed by one of the smallest sized intubation-tubes, this by a larger one, and finally the largest sized tube was introduced. It could not be passed on account of the tracheotomy-tube, and violent vomiting ensued, when the tube and this cast

were ejected. After the ejection of this membrane a large sized tube was introduced and pressed down into position, as the tracheotomy tube was removed. This gave the child great comfort. She remained comfortable after the introduction of the tube, took several glasses of milk during the afternoon, and in the evening was taken to the train and returned to Minnesota, the intubation-tube remaining in the larynx to be removed by Dr. McDavitt in the course of a few days.

PROFESSOR JOHN B. HAMILTON, of Washington, D. C., read a paper on

THE RADICAL CURE OF INGUINAL HERNIA,

in which he said that the ablest surgeons from the earliest times to our day have given much attention to this subject. Dr. Baxter's tables show that out of 334,321 recruits and substitutes examined by the recruiting officers during the war of the rebellion, more than 17,000 were rejected on account of hernia. The London Truss-Society, during the first twenty-eight years of its existence, issued over 83,000 trusses. Two factories in Philadelphia manufacture and sell from 216,000 to 250,000 per annum.

Celsus was the first surgeon to have definite ideas about the operation for the cure of hernia; he used cauterization and a bandage. Ligature of the sac has been practiced from an early day. Maupas performed gastrorraphy. Lanfranc, in 1296, favored castration. Ambrose Pare was the first to absolutely abandon castration; he used astringents. Freytag was the first to practice dilatation of the rings in strangulated hernia. Nicholas le Quin, of Paris, introduced the truss about the year 1660, but it was not until the middle of the eighteenth century that surgeons began to cut off the gangrenous por-

tion of intestine in cases of strangulated hernia. The galvano-cautery was proposed by Dr. John C. Minor, of New York. Galaud, in 1878, favored the elastic ligature. The practice of scarification is a very ancient one, and has been brought down to recent date with excellent results. Guerin was probably the first to practice subcutaneous scarification. Invagination has for its object the occlusion of the inguinal ring by the fascia, and sometimes by the integuments. The late Dr. George Allen, of Springfield, Illinois, reported fifty cases cured by Gerdy's method. Wood's method not only invaginates the fascia, but draws together the pillars. All of these methods have their greatest successes in small hernias and bubonocèles, and are absolutely valueless in those which are so large that ordinary invagination will not occlude the opening. Dr. Alexander stated, in 1883, that he had performed the radical cure thirty times without any deaths. Wood reports 339 cases without special antiseptic precautions; 96 were cured, 7 died, and 59 failed; in the remainder the result could not be ascertained. Accidents may follow Wood's operation as well as others, such as sloughing, peritonitis, and tetanus. From official reports on file in the Marine Hospital Bureau at Washington, it appears that in Calcutta, India, in 1884, out of a total number of deaths from all causes of 1,293, nearly nine per cent. were due to tetanus. Professor Hamilton favored an operation in all cases affording a reasonable prospect of cure, and thought all cases of bubonocèle should be operated upon.

PROFESSOR D. W. GRAHAM said he felt he expressed the sentiments of every member present when he said that it is probably not possible to find in the English language as com-

plete and satisfactory a review of the history of the various operations for the radical cure of hernia as Dr. Hamilton has given us in this paper. Certainly it has been gratifying and instructive to us all to listen to it. Some of the figures which Dr. Hamilton quotes give us an idea of the great prevalence of hernia. He believed reliable statistics show that on an average about every fifteenth or sixteenth individual in civilized communities suffers from some form of it. When we remember this great prevalence, and when we remember that every subject of a hernia sustains thereby a certain amount of disability, and that very many are entirely disabled by it, the subject of the radical cure of hernia assumes an importance not always accorded to it. He thought the author of the paper took a rather highly colored view of the future of these operations. It is not probable that this generation, at least, will be able to use the expressions he thinks surgeons will be using some day in Chicago. However, this degree of success is to be looked forward to and attained if possible. In regard to the modern methods of operating, he understood the distinctive features of Wood's method to be that it is almost entirely subcutaneous, that he uses wire, and that he allows the sac to remain in the canal as a kind of plug. So far as he knew, this method is not practiced in this part of the country to any great extent. In Mr. Wood's hands it seems to be successful in permanently curing a considerable majority of those operated upon, and in decidedly benefiting a good many who are not permanently cured. His statistics show that there is almost no danger to life from the operation itself, at least in his hands. Any method which will give such results, and at the same time involves so little risk to life, must be a good operation.

The open method, the one chiefly practiced in this country,

according to his observation, contemplates strict attention to antiseptic details and the avoidance of suppuration. It involves a little more risk to life from the operation *per se*, but to compensate for this it would seem to give, theoretically at least, a larger percentage of permanent and complete cures. The modifications or varieties consist chiefly in dealing with the sac. Although MacCormac claims that unless the rings are wide there is no advantage in attempting to close them, yet it seems that the best way to treat the sac is to excise a section of the neck between two ligatures, pushing the stump into the abdominal cavity and allowing the body of the sac to remain, unless it is small and loosely adherent, when it may be extirpated. After any of these operations there remains the funnel-like depression on the inner surface of the abdominal wall, which favors a recurrence of the hernia, however efficiently we may have obliterated the sac and closed the rings. MacEwen, of Glasgow, in a recent article describes and advocates a plan he has devised for obliterating the depression. He utilizes the sac by dissecting it from its surrounding attachments, putting a suture through it from side to side beginning at the lower end, thus making a corrugated pad, which he pushes through the internal ring into the cavity, after first separating the peritoneum for a little distance around the ring with the finger. This makes a convexity on the inner surface of the abdominal wall, when there would otherwise be a concavity. This modification appears to be a real improvement, but the practical value of it is as yet largely conjectural. By way of adding something from an historical standpoint, there might be mentioned what was not alluded to in the paper, that electrolysis has been used and advised to set up a plastic inflammation in the inguinal tract. He believed this suggestion came from a Cleveland surgeon, whose name he had forgotten.

This is the same in principle, of course, as the use of subcutaneous injections, and he should think would be preferable to the injections, if he were to judge of it without having tried it.

PROFESSOR MOSES GUNN said: This subject is of intense interest, and we are very much indebted to Dr. Hamilton for the exhaustive review he has given us. We have to consider what are the best methods for operating with the intent of effecting a radical cure. He was inclined to discard all the old invaginating processes. In the first place, the invaginated portion is always liable to subsequent prolapse; in the next place, it is always a foul mess. It won't do to simply remove the cuticle; all the organs of the skin must be destroyed. The skin contains the hair, sweat and sebaceous follicles, and unless they are destroyed they will continue their work, and thus accumulate material for decomposition. In order to make a success you are obliged to do more than destroy the cuticle. You will have to destroy the skin, and that is a very slow process and exceedingly nasty. Therefore he was inclined to repudiate all invaginating processes. He repudiates also all of the subcutaneous processes, for they are blind procedures, and he would not adopt them where an open operation could be as well and even more advantageously and safely resorted to. He believed the best and surest method of trying to effect a radical cure of hernia is the open method. This method should be performed in every case where an operation is made for the relief of a strangulated inguinal hernia. Just as soon as the operator has opened the neck of the sac and restored the prolapsed viscera or viscus, he should close up the wound. He should begin at the topmost portion of the sac, and with a curved needle and catgut take it up and ligate it as near to the internal ring as he can. Then he should drop down about half an inch lower and ligate again,

and so on down through the canal. He should then approximate the pillars at and above the external ring as closely as possible and close the outside tissues. Thus the operation which is made for the relief of the accident should be made an operation for radical cure. It can be done more effectually at that time than at any other.

Again, the physician is called upon to make an operation for a radical cure; the patient comes to him complaining of the truss, which has become ineffectual, the hernia escaping in spite of it, and his life becoming a misery to him, and he asks if something cannot be done to make a radical cure. The answer is, "yes"; but the question is, by what method shall we make it? Choose the open operation, practiced with all antiseptic precautions. Cut down upon the parts, separate and dissect out as well as you can the neck of the sac, the hernia having been reduced; ligate the sac and cut out a portion. Thrust the stump back into the canal and approximate the pillars, closing them tightly and keeping the external ring tightly closed. So much for the method; now for the prospect of success. How much right have we to expect what might justly be called a radical cure? By the term radical, he meant permanent. In what proportion of cases can we expect to have a permanent cure, so that the patient will never have hernia again? What is hernia, and who have it? He thought he could safely say that the typical man never has hernia. When the true type in development has been attained and the abdominal walls closely woven together, they are proof against such accidents and there will be no hernia. Hernia is the result of the imperfect development of the abdominal muscles and aponeuroses. When that imperfect anatomical development obtains in the patient, the abdominal muscles are thin and flabby, and in such cases we get hernia.

Nor can we in such a case by an operation make a man better than his Creator made him, but if we can make him as good as he was we may congratulate ourselves. After we have operated and closed up this weak point as well as possible, the very best result that we can expect is that we have made the man as good as he was before he had hernia ; but, if he was weak enough to have hernia from certain exciting causes, he will be weak enough to have it under similar circumstances again. If his hernia is brought on by lifting and straining, the same exciting cause will bring it on again, and under these circumstances a radical cure is only measurably radical. We should tell the patient after operation that if he will be more careful and take no violent exercise, he may hope for exemption from hernia.

In other cases, the patient has an old and immense hernia and cannot wear a truss; we operate upon him and can say to him that if he will be more careful and wear a truss, he can be tolerably comfortable for the rest of his life. Such, he apprehended, is the true aim and scope of operations for the radical cure of hernia ; such are the precautions that should be given patients, as they must become our coöperators in order to make this operation a success ; and with such coöperation and conscientious efforts on our own part, radical cure of hernia becomes a standard and important operation, as important as the subject itself, which, as we have seen, is of immense importance on account of the great dissemination of the disease.

DOCTOR E. F. WELLS said: Dr. Hamilton has certainly read a very interesting and extensive paper. There is one point in particular mentioned by the author, namely, that he advocates an operation in all suitable cases where an operation is not distinctly indicated. Every practitioner of large ex-

perience must certainly have met with many cases in which the truss had been applied resulting in a cure, and he thought the truss should not be stricken entirely from the methods of obtaining a radical cure of hernia.

PROFESSOR HAMILTON in closing the discussion said he need not say that he was extremely gratified to find such substantial unanimity of sentiment as to the propriety of operation—nay, as to the necessity of operation, but there can be no doubt as to the necessity of further statistics on the subject. In regard to invagination, he thought a reading of the paper would not show that he advocated the method of invagination recommended by Gerdy. In the recent open method there is no invagination. Under the original Wood's method, the subcutaneous fascia only was pushed up under the ring; by the open method we cut down directly on the sac. This open method is really a combination method, because it brings together the pillars and takes care of the sac. Statistics are necessarily unreliable as to the ultimate permanency of the cure of these cases. The best statistics are those shown by the Swedish Hospital, where out of 300 cases a large percentage of recoveries is shown, and if statistics are worth anything in determining the success of a method, we must place some reliance on these. It would be well to have patients come back every year for the purpose of re-examination.

Professor Fenger, if he correctly understood him, speaks of the influence of suppuration in curing these wounds by letting them heal from the bottom, but in the various subcutaneous operations that is exactly what it is intended to avoid. There is no doubt that suppuration will make a radical cure of hernia if the patient's strength lasts, and the suppuration does not extend into the abdominal fascia. That was the method by which the old red-hot irons accomplished their purpose. The

mineral acids produced a radical cure by the destruction of the tissue and healing from the bottom. The seton also performed a cure, but it has so many disadvantages that it is not to be compared with those procedures that stop the inflammatory processes short of the decomposition or death of the exudate. In regard to operating on children, he thought the argument cannot be regarded as sound that we should not operate on them on account of the difficulty of keeping a bandage on, for surely if any cases are to be benefited by an operation for radical cure, they are those in which the patient is young enough to grow—in which the tissues can be brought together and retained with great hope of a permanent cure. Everybody knows that cases do recover by the use of the truss, but the proportion, he believed, is less than by any other method. As stated by Professor Gunn, it is found that a majority of operations for strangulated hernia are, in effect, really operations for the radical cure, and there are more than five cures from operations to one after application of the truss. And when we remember that there are 250,000 trusses manufactured per annum in Philadelphia alone, he doubts very much if it can be shown that trusses have even a fair percentage of recoveries following their use.

PROFESSOR WM. T. BELFIELD reported a case of
SUPRA-PUBIC CYSTOTOMY WITH EXTRACTION OF LARGE CALCULI,
AND CORROSIVE SUBLIMATE POISONING.

The patient was a feeble, emaciated man, 71 years old, who for nine years had suffered from cystitis of steadily increasing severity, caused, as was supposed by his various physicians, by prostatic enlargement. He had been sounded for stone a year ago under chloroform, but with negative result. For two years he had been unable to empty the bladder except by catheter. He refused permission to introduce the sound be-

cause convinced that he had no stone, but was anxious to have an operation for the removal of the prostatic enlargement.

June 7, supra-pubic cystotomy was undertaken for the purpose of removing by galvano-cautery that portion of the prostate which was assumed to project into the bladder. The introduction of the sound under ether revealed a large stone; the usual incision was made; the finger in the bladder found two calculi, one behind the prostate, the other adhering to the fundus of the bladder, each about as large as a walnut. The first stone was crushed and the second with much difficulty removed entire. The patient was so collapsed that no attempt was made to remove the prostatic outgrowth, which could have been accomplished without much difficulty, and the following day the temperature was 100.5° F., the highest observed. On the third day it was normal and so remained. The wound was irrigated once daily with a bichloride of mercury solution. The progress was entirely favorable until the eleventh day, when there began a severe diarrhoea with much rectal pain and tenesmus, and later the evacuations were tinged with blood and the patient complained of a metallic taste. Sublimate poisoning was recognized and the solution discontinued. Temporary improvement followed, but death ultimately resulted on the thirty-sixth day after operation. No autopsy was permitted, but a hasty examination of the abdominal contents was made. Peritoneum, kidneys and bladder were normal, except that the latter was much hypertrophied. The intestines could not be opened; the calculi weighed 2 ounces and 6 drachms.

THE DEATH OF PROFESSOR F. H. HAMILTON.

PROFESSOR TRUMAN W. MILLER offered the following resolution, which was adopted:

“WHEREAS, This Society has learned with deep regret of the death of Dr. Frank Hastings Hamilton, of New York, and

“WHEREAS, In his death, the United States has lost one of its most distinguished surgeons; one of its ablest teachers; one of the purest patriots, and, in his private life, one of the most amiable of men; therefore, be it

“*Resolved* by this Society, That we hereby give public testimony to the many virtues of the deceased, and that we tender to his family the assurance of the profound sympathy of this Society with them in the hour of their affliction; that a copy of these resolutions be furnished them, and that a copy be spread upon the records.”

CHICAGO MEDICAL SOCIETY.

Stated Meeting, September 6, 1886.—E. J. DOERING, M. D., President, in the chair.

PROFESSOR J. S. JEWELL gave a partial verbal abstract of his paper on

OVERFILLING AND DILATATION OF THE COLON.

He said that for the last ten years this subject had attracted more or less of his attention. During the last eight or ten years he had accumulated a list of over five hundred carefully studied cases, in which the condition named existed and concerning which he gave his observations. His mode of investigating the cases in which the overfilling existed

has been as follows: The patient is stripped so that the abdomen is bare, the abdominal walls being relaxed. Then he takes a plate of soft rubber at least two inches in length by an inch and a half in breadth and one quarter inch in thickness, and a heavy steel hammer, quite as heavy as the ordinary surgical bone hammer. With this the abdomen is carefully percussed over the track of the colon, from its origin, tracing it up under the liver, across and down to the sigmoid flexure. Thus percussing over the track of the colon, and carefully locating every mass of fæces, even in persons with fleshy abdominal walls, he has been able to get at its course and contents. Out of these five hundred cases, perhaps a hundred have said that they were as "regular as clockwork" in having movements from their bowels. But upon examination, in most of such cases the colon was found to have variable quantities of fæcal material lying in it. The part of the colon most subject to dilatation is the sigmoid flexure and the descending colon. At the flexure of the colon, deep in the left hypochondriac region, almost as frequent as in any other part of the course of the colon, he had found it dilated and filled with fæcal matter. The next most common situation is the transverse colon, last of all the cæcum. In one case where the colon was very largely dilated, during the thirty or forty hours that were devoted to emptying it, not continuously but at different times, two gallons or more of fæces were removed. The usual condition is to find masses of fæces lying in lumps here and there, but not filling the entire intestine.

In one case a mass was removed from the right extremity of the colon by massage, and flooding the colon its entire length with water. The fact that this mass had remained

in the colon for more than nine months was ascertained in this way: The patient had taken a dish of dewberries, such as appear in the fall after the ordinary blackberry has passed its season. He was in ill health, and growing worse during his visit he returned home. This was in September. Professor Jewell saw him early in June following. When the mass was removed it was found to be more or less filled with the seeds of the dewberry, and according to his own account he had not taken berries of any kind since the September previous, certainly no dewberries. This mass was about the consistence of soft putty and the size of a large Irish potato.

In most of the cases investigated the colon was dilated apparently, in some part or other, all the way from two to three times its proper calibre. This class of patients are all liable to become "bilious," and are habitually taking cathartic pills, mineral waters, etc. In all or nearly all instances Professor Jewell could trace their "biliousness" to gradual filling up of the colon, and the disturbance produced from this cause in the digestive apparatus higher up. The change in the secretions of the mouth, the bad breath, the unhealthy odor of the skin produced by absorption of fœtid substances from the rotting masses in the intestine, together with the coloring matter in the same, gives the skin of the patient a peculiar, dirty, sallow color. One of the first things to occur in addition to the dilatation, and weakening of the muscular coat of the colon by accumulation of material in it, is irritation of portions of the mucous membranes where the fœcal masses lie, producing local catarrhs. This occurs with a frequency and to an extent that no one would suspect unless the patient or the nurse should carefully watch the

stool. The next important factor in these cases is irritation of the peripheral ends of the sensory nerves of the intestinal mucous membrane, irritated by contact with the fœcal masses. The nerves that return from the colon probably enter the spinal cord at a level not lower than that of the tenth or eleventh dorsal vertebra. Above the level named they probably enter the cord at various points higher up in the lower two-thirds of the dorsal cord, not to mention direct medulla connections, etc. Along these nerves are propagated the irritative impressions from the colon into the spinal cord or medulla, and thereby "switch" connections outgoing or reflex impulses are sent to other portions of the body, producing thus various forms of disorder to be referred to later. He believes that he has not found one case out of twenty of ordinary melancholia that has not had its origin partly or in some cases apparently entirely in overfilling of the colon. Headache and a great many transient disorders referred to the head more frequently owe their origin to this source than he had ever supposed. Next is the influence upon the circulation in general, especially upon the heart's action, lowering its tension, and thus giving a feeble pulse.

Dilatation of the colon often causes a sluggish capillary circulation, and this accounts for the frequency with which patients complain of cold extremities. Professor Jewell has found patients who could not remember having had naturally warm feet for years, when upon removal of the masses in the colon the feet would become warm. In insomnia he has found the condition of the colon described to be a frequent cause, the colon being the seat of the original disorder. There is lowering of the vascular tension nearly always in these cases, hence the feeble nutrition and feeble circulation in the

brain, not to mention other parts. The next most important result of dilatation and overfilling of the colon is the fact that these masses of retained fæcal substance in various ways poison the individual by absorption of septic material. He has had three cases of epilepsy that he traced exclusively, as far as could be told by the results of treatment afterwards, to disease in the left extremity of the colon caused by fæcal accumulations, and when the disorder was removed by proper means he was able to relieve the epilepsy. For the removal of these masses, as a rule, he does not use purgatives, but injections are given after the following plan: A large bag fountain syringe, holding half a gallon, is adjusted at a convenient height from the floor, the patient lying down in the knee-chest position. The fluid should flow with considerable force until it makes its way past the upper sphincter which is at the lower part of the sigmoid flexure; pass one quart to one-half gallon of water; according to the size of the colon, so as to fill the entire organ to the cæcum. In some instances he has been able to introduce as much as a gallon of water into the colon, the patient feeling no serious inconvenience from it, and a half gallon is a common amount to introduce. The patient is then directed to lie down on the left side, and by proper massage over the ascending colon the liquid is moved and with it the contents of the bowel toward the rectum. This should be done once or twice in the twenty-four hours until the colon is clear, and by this means it should be kept so. After this has been accomplished give the patient something that will act as a stimulant to the nervo-muscular coat of the colon. A good prescription for this purpose he has found to be, either in pill or capsule form, extract of cascara, a little belladonna, strychnia, hydrastis canadensis and aloes. By care the colon can be kept clear, and the disorders of the stomach

usually disappear, the secretions of the mouth are improved, the skin becomes of a healthier color and loses the distinctly faecal odor that it frequently has.

He has met with a number of cases of so-called typho-malarial fever in their earlier stage with a temperature as high at times as 103-4-5, in which, by removing a great mass of material undergoing rapid fermentative decomposition at the high heat of the body, leading to rapid distension of the colon with gas, the signs of disease abated in a few hours and rapid recovery occurred. Where there is considerable inflammation in the bowel itself he introduces water pretty well charged with listerine or some other antiseptic, and a little glycerine or other medicinal agents, and in this way the intestine is purified and cleansed and the individual immediately improved. It seems now astonishing that it never occurred to him earlier, that to have a mass of faeces undergoing fermentation and decomposition in the interior of the body, and in contact with an absorbent surface like that of the mucous membrane of the colon is, or often may be, the real cause of serious diseases.

PROFESSOR H. A. JOHNSON in opening the discussion said: This is a subject to which he had given no special attention, but perhaps if he should propose one or two questions they might elicit some information. First, the inquiry suggests itself as to why this state of things exists, what is the cause of it? Perhaps as the author has suggested, our rapid mode of eating, and our neglect of the natural demands of the functions of digestion have something to do with it, but this does not seem to cover it all. Secondly, the question arises as to how far such a state of things as he describes does actually exist in the colon, viz., putrefaction of the contents. So far as his observation goes, the contents of the cavities of the body,

including the alimentary canal and bladder, are kept from undergoing these putrefactive changes while they are inclosed. It is true that the fæcal matters are full of bacteria in various forms, but he is not sure that the ordinary processes that take place out of the body, go on here. Thirdly, as to the function of the colon; it is both an excretory and secretory organ, and nutritive matter that is carried into it is undoubtedly taken up in its passage through it. There should be a delay, a normal arrest of the progress of the fæcal mass from the time it enters the colon at the cæcum till its discharge. In the normal condition the fæcal mass is made up of the debris, of the waste matters of food, and the material removed from the blood; there ought to be, physiologically, a retardation—time for the accomplishment of these two functions. What is that time?

DR. WM. E. CLARK said: The subject is one of great importance, and one to which he had given much thought. His first call in consultation, after his return to the city some twenty years ago, was to a female patient who had been an invalid for a number of years. A tumor could be felt through the abdominal walls, supposed by the attending physician to be a tubercular enlargement of the mesenteric glands, but which proved to be a mass of fæcal matter in the colon. It had probably been accumulating for a long time, as after removal it was found largely to consist of bran from Graham bread—her principal diet for several years previous. Under appropriate treatment, with particular attention to the condition of her bowels, the patient apparently recovered her health, though she died some years after with disease of the kidneys—the latter perhaps having some relation to the previous condition of the bowels.

He had just made an examination of a supposed uterine tumor, and found a tumor but not connected with the uterus

—but an accumulation of fæcal matter in the colon, and consequently made arrangements for its evacuation. For the removal of these masses of fæcal matter, he first gave cathartic with large doses of olive oil and then used injections of water into the bowel as far up as possible through a stomach-tube; sometimes resorting to the placental forceps for the removal of large fragments.

PROFESSOR G. C. PAOLI said: He had listened with a great deal of interest to the report of Professor Jewell. We know that expansion of the colon occurs in many different diseases, and there is hardly a practitioner who has not seen it in his practice for years. We see it in typhoid fever, nephritis, hysteria and lead-colic. Constipation is undoubtedly a great cause of expansion of the colon. A man gets constipated, neglects himself, his fæces become very hard, and in consequence pains occur in the colon. With due respect to the author's experience and observation, he must admit that although we meet with cases in our practice they are not so common that we see them in the hospital. In regard to the treatment, we ought to administer such remedies as will give tonicity to the muscular coat of the bowels, such as cascara sagrada in combination with small doses of aloes. But without physical exercise medicine has very little beneficial effect. He has seen a shower bath over the abdomen have a good effect in producing contraction and tonicity of the muscular coat of the bowels. In regard to the injection which the author advises, it is well to remark that the rectum should first have a digital examination, because often hard excrement is impacted in it and under such circumstances the injection would meet with an obstacle. Strychnia may be very good in chronic but not in acute cases.

PROFESSOR JEWELL, in closing the discussion, said: The members of the society will of course understand that he had spoken only of the sick people who had come to him, a special class that is not met with so frequently in general practice. He was speaking entirely within bounds when he said that the number of cases that he now has on record in which over-filling of the colon was one of the principal features of disorder, must be 700 or 800 during the last ten years, and 500 of these have been made the basis of his study. The question as to how long the matter may be left in the large intestine without harm is an exceedingly interesting one, and he has made that a study. The difference between the ordinary slow decomposition of fæcal matter in the intestine and unhealthy decomposition has been taken into account in that study, as well as the conditions or causes that bring about unhealthy decomposition. He is convinced that not enough stress is laid upon this subject. Many persons in the condition referred to have been all but ruined by taking by the week, month and year, cathartics, which must be taken into the stomach first, dissolved and go the entire length of the small intestine before they reach the colon. The colon may be emptied in a much more satisfactory way by means of large injections, together with the use of medicinal agents, to stimulate naturally its weakened muscular apparatus.

DR. A. SCHIRMER reported a case of

ACTINOMYCOSIS HOMINIS,

with exhibition of patient and specimens of actinomycetes. The paper is given in full in another part of the JOURNAL AND EXAMINER.

DR. NEWKIRK asked if the patient knew of any disease among the cattle he attended.

DR. SCHIRMER: He said there was no disease among the cattle, and nobody else had such a disease.

PROFESSOR W. T. BELFIELD said: The case is hardly one for discussion, because Dr. Schirmer has not said anything about actinomycoses as such, but merely about the case. The finding of actinomyces in the sputum is very interesting; it is undoubtedly a case of actinomycosis of the lungs and must prove fatal. There are only some thirty cases recorded in which this parasite has been found in men. He said he was not familiar with the literature on the subject for the last year, but up to that time there had been no well authenticated case of actinomycosis observed in man either in England or America.

DR. A. V. PARK read a paper on a case of

CARIES OF THE RIGHT PARIETAL BONE CAUSED BY RAILWAY
INJURY,

which will appear in the next number of the JOURNAL AND
EXAMINER.

CHICAGO GYNÆCOLOGICAL SOCIETY.

Regular Meeting, Friday, July 16, 1886.—The VICE-PRESIDENT, HENRY T. BYFORD, M. D., in the chair.

I.—WAXHAM. *Discussion of paper on "Occlusion of the Os Uteri as an Impediment to Labour, with a Report of Two Cases."*

II.—BYFORD. *Discussion of paper entitled, "A Study of the Causes and Treatment of Pelvic Hæmatocele."*

I.—DISCUSSION OF PROFESSOR F. E. WAXHAM'S PAPER ON OCCLUSION OF THE OS UTERI AS AN IMPEDIMENT TO LABOUR; WITH A REPORT OF TWO CASES.

[Read at the May meeting.]

PROFESSOR W. W. JAGGARD said: From the very clear description of Dr. Waxham's case, I infer the condition was that described by Nägele under the term *conglutinatio orificii*, an uncommon complication of labour, but seldom indicating incision. Usually pressure of the finger is sufficient to open the os.

A more serious condition is that described by Schmitt, under the term *conglutinatio organica*. The cervical canal is obliterated to a variable extent. I had a case, illustrating this condition, under my observation in Professor Spaeth's wards during the winter of 1882. The lower half of the cervical canal was obliterated. Radial incisions were made around the *os externum*, and the canal was dilated with the index finger. Forceps were subsequently applied. The case was reported in the *Medical News*.

DR. JOHN BARTLETT said: I have nothing of interest to offer directly pertinent to the present discussion; but I have rather recently attended a case which I deem so nearly akin to those reported by Dr. Waxham as to justify me in mentioning it.

Mrs. Anderson, thirty-seven years old, came under my notice about three years ago. Five years since, she felt a burning pain in the nose and about the womb. At the same time her menstruation increased in quantity until in the course of a year it became profuse. Because of these difficulties, she sought relief from a quack. For the purpose of removing a cancer, which this pretender diagnosticated, a most violent caustic was put into the nostrils and applied to the womb. One year afterwards the tissues injured by the corrosive had healed; a violent uterine pain remained, and the flow had again become excessive. She applied to Dr. A. R. Jackson, who made an operation for the relief of the *atresia vaginæ* which he found existing. Although the operation was thorough, contraction recurred; so that when she was admitted into the Woman's Hospital in 1883, her condition was probably about the same as it was prior to Dr. Jackson's treatment. Dr. Mary H. Thompson operated upon the patient, opening thoroughly to the *os uteri*. Contractions, however, very soon reformed in the vagina; in October, 1885, her condition was serious. Her pulse was weak and frequent; neuralgic pains about the pelvis were nearly constant, and superadded to these older symptoms were those suggesting pregnancy. The uterus was enlarged and menstruation had ceased for three months. Of her condition at that time, Dr. Thompson writes: "The vagina was closed more perfectly than before. Not an opening could be seen in the occluding disc, which was only one inch from the *ostium vaginæ*. By examination through the rectum, it was ascertained that the uterus was enlarged, especially toward one side of the body." The distress of the patient, the apparently complete closure of the vagina, the non-appearance of the menses and the peculiar enlargement of the womb suggested either retained menstrual blood or some form of

pregnancy. After a consultation, Dr. Thompson proceeded to open up the canal—at the time supposed to be perfectly occluded—between the uterus and vaginal *cul-de-sac*. In reality, a very small opening still existed; this was enlarged carefully by incision and distension until the *os uteri* was thought to be easily in communication with the remains of the vagina.

One month after the operation I was called upon to visit the patient. On the preceding night at a certain hour, most violent pains, as those of child-bearing, had come on, and had continued despite of anodynes, for some five hours. The pains had now, at the same hour as the night before, returned with increased violence. Not to go into details, I will say that the symptoms pointed strongly to some form of pregnancy. In view of the serious character of the case, I called in consultation on the next day, Dr. R. G. Bogue. We left the patient still in doubt as to her true condition. During the following night, I was again summoned; the exact resemblance of the pains to those of labor, and the now recognized hardening of the swelling above the pubes during these pains, made it quite certain that pregnancy existed, and that the contractions would finally lead to the extrusion of the fœtus from its sac *per vias naturales*, or otherwise. Upon careful examination, the vagina was found to be shut off about one inch from the *ostium* by a hard, firm and thick disc of cicatricial tissue. Toward one circumference the small opening detected and enlarged by Dr. Thompson a month before was recognized. By rectal examination, what seemed to be the *cervix uteri* was reached, three quarters of an inch beyond the upper face of the cicatricial disc. Connecting the disc and cervix was apparently a tube of tissue much smaller in circumference and thinner than proper vaginal walls. The pains continuing with

regularity, Dr. Bogue and myself concluded to assist delivery. Slight incisions by means of the bistoury were made in the circumference of the opening in the cicatricial disc, a metallic dilator was then introduced, and when some dilatation had been effected, a modified Barnes's dilator of very small size was inserted. Within an hour, by the occasional use of the knife, and the continual tension of dilators, the disc opening admitted for a little distance the end of the finger into the remnant of the vaginal tube, above the disc. By the point of the finger pressed firmly onward, could now be recognized a hard body which was taken for the *cervix uteri*. With a little more dilatation of the disc opening, it was perceived that the hard body was the foetus, and that the *os uteri* was healthy and dilating in a normal manner, the membranes being unruptured. As soon as the opposing disc opening was expanded to a size presumed to be sufficient to permit of the passage of the head, the membranes were ruptured. It was then discovered that the shoulder presented; by aid of suitable instruments the child was turned and in the somewhat too vigorous efforts at delivery the body parted from the head, the latter remaining *in utero*. This accident in such a case, with an extra, entirely rigid *os* precluding free procedure through the *os uteri*, ordinarily would be regarded as unfortunate. I looked upon it as a favorable step toward delivery, confident that by means of a suitable vectis the head could be easily scooped through both of the opposing *ora*. In fact, the head was readily so delivered, and the placenta falling over the *os uteri* was removed with the same instrument. One of the symptoms that confused the diagnosis on the first day of the appearance of labour pains was the unusually large, rapidly attained size of the suprapubic tumor. This symptom was now explained, for an examination to determine if the patient was entirely "cleared,"

revealed the presence of a second foetus presenting by the head. The vectis was applied and the foetus at once withdrawn, as was also in like manner the second placenta.

The labour revealed the true anatomy of the injured parts. The patient desired that the passage through the disc should be kept open, but inasmuch as the *os uteri* was almost immediately behind it, it was deemed useless and harmful to make the attempt. Within three months the dilated opening in the disc had contracted to a size but little greater than that observed before the miscarriage.

PROFESSOR F. E. WAXHAM said: I would simply allude to the great resemblance in the case coming under my care, between the uterine tissue and the foetal membranes, especially in those cases in which there is but a small amount of amniotic fluid, and I can see how very easy it would be to do permanent injury to the mother by rupturing the uterine tissue by a pencil or some other sharp-pointed instrument, when, perhaps, by more extended and careful examination, it would be found that simple dilation would be sufficient. In the case reported, the knowledge that the amniotic fluid had been escaping for several hours was sufficient evidence to me that there was an *os*, and it was also proof that the tissues presenting were not membranes, but the uterine tissue. But the great trouble was to discover the *os*, and I assure you it was difficult indeed. The *os* was present in the center of the presenting mass, and yet we could not discover it. It was impossible for me to do so, and it was only after a continued, careful and searching examination that Dr. Nelson was enabled to detect the very slight dimple which was present.

II.—DISCUSSION OF DR. HENRY T. BYFORD'S PAPER, ENTITLED
A STUDY OF THE CAUSE AND TREATMENT OF PELVIC
HÆMATOCELES."

[Read at the June meeting.]

PROFESSOR T. D. FITCH said: I have had very limited experience with operative procedure in this class of cases. As a rule, I feel like praising the bridge that has carried me safely over. My usual treatment has been the expectant plan, or trusting to resorption of the clot. Resorption occurs in other tissues of the body, the leg or arm, where you would not think of opening the cavity and turning out the clot. It would be a very bad principle in surgery, I think. My experience has not been sufficient to condemn the operation entirely, but I feel like trusting to the safer plan of the expectant treatment. I have never operated in more than two or three cases, and would not have operated in them had not there been a mistake in diagnosis. One of these cases was a lady at Jefferson, who gave a history of cellulitis. There was softening and fluctuation in the tumor presenting. I was called in consultation by the attending physician. The symptoms were those of cellulitis, resulting in abscess. The aspirator was used and a very small amount of pus was drawn off, and then a larger amount of disintegrated blood. All was drawn off that could be, and the woman recovered, no bad results following the aspiration. No drainage was instituted, and no scooping out of the blood clot was performed; there was no special treatment except on general principles, and the vaginal injections of antiseptic fluids. The opening was not enlarged, the sac was not injected, nor washed out. The opening made by the aspirator needle probably closed up so that no air was admitted, and no decomposition or blood-poisoning occurred.

Another case was one in which I assisted in an operation

for supposed extra-uterine pregnancy. Two distinguished Fellows of this Society were present and concurred in the diagnosis. It was decided to open the tumor through the vagina with the galvano-cautery knife, and when this was opened, there poured out of it a gelatinous fluid, as white, and as clear and pure as could be; it looked to me very much like soft boiled rice. It was a clear white, and perfectly inodorous. The sac was washed out with antiseptic fluids, and the patient treated on general principles; I think no drainage was used. The sac was not scooped out; nothing was turned out except the tablespoonful or two of gelatinous fluid of which I spoke.

Another case I might mention, in which the attending physician and myself (I was called in consultation) diagnosed an abscess; opened it with the aspirator, and found that it was an hæmatocele. I believe the expectant plan of treatment is preferable to operative interference. I think a larger percentage of cases would recover under this treatment.

PROFESSOR JOHN BARTLETT said: I will take occasion to refer to a fatal accident that once came under my observation, which tends to show the necessity for the greatest care in opening cavities, *per vaginam*, whether resulting from hæmatocele or cellulitis. A patient was greatly reduced by long continued pelvic abscesses. It seemed to be one of those cases in which an operator is called upon to make a determined attempt to reach evacuate and curette a chain of abscesses found to exist within the pelvis. Several collections of matter were opened, and it was supposed that the object of the operative procedure had been happily accomplished. The final washing of the cavity with carbolized water was in progress, when suddenly the patient fell into a

profound collapse; respiration ceasing and pulsation at the wrist failing. This condition was regarded as an accident from ether. Every effort at restoration was unavailing till a Faradic current was passed through the phrenic nerves at proper respiratory intervals. The patient then gradually rallied, and the danger was thought to have ceased. On the following morning the carbolized injection was repeated by an assistant; a fatal collapse immediately ensued. Post-mortem examination revealed a small opening through the roof of the pelvis, and the presence in the peritoneal cavity of the injected fluid. If the Society will pardon a digression, before closing I will take occasion to refer to a symptom of hæmatocele, which would seem to be as rare as it is suggestive. In one case, associated with this condition, I observed the whole surface of the abdomen below the navel, to present an ecchymotic appearance as from the extravasation of blood after an injury. The patient was alarmed at the "black and blue" appearance, regarding it as a sign of "mortification." It existed for weeks and disappeared, *pari passu*, with the pelvic extravasation.

PROFESSOR W. W. JAGGARD thought the ruptured cyst of extra-uterine pregnancy a more frequent cause of retro-uterine hæmatocele than the text-books would lead one to believe. Gallard has emphasized the importance of the operation of this etiological factor. He * makes a statement to the effect that independently of traumatism, almost all hæmatocèles are caused by the ruptured cyst of extra-uterine pregnancy. Such a broad statement naturally provoked salutary criticism. More recently, Veit †, of Berlin, has collected 146

* Leçons Cliniques des Maladies des Femmes. Paris, 1873. P. 635.

† Die Eileiterschwangerschaft. Stuttgart, 1884. P. 14.

cases of hæmatocele, of which forty cases, or 28 per centum, were probably due to the ruptured cyst of ectopic gestation. Veit's estimate does not appear extravagant.

He would like to inquire of the author of the paper, what was the indication in the case reported for operative interference? The indication had probably been stated, but through inattention he did not remember it. A small non-suppurating, retro-uterine hæmatocele of six months' standing was not, *per se*, an indication for any operative interference.

Any discussion of the surgical treatment of retro-uterine hæmatocèles, would be incomplete without some mention of Dr. A. Martin's plan of treatment in cases of extra-peritoneal hæmatoma. Laparotomy is performed, eventration of the intestines effected, the sac incised, evacuated and curetted, and subsequently united by sutures, drainage is maintained *per vaginam*. In Martin's hands, this operation has been perfectly successful in six cases.

PROFESSOR C. T. PARKES said: I do not think I have anything new to offer on the question of treatment of hæmatocele. My experience embraces only three cases. The first was a lady whom Dr. Fitch saw with me about a week after the initial symptoms, which present themselves in these troubles, had appeared, and we concluded to make an opening through the *cul-de-sac* of Douglas. I used the Paquelin cautery for the purpose of opening up the mass, which was not very extensive. The principal symptom which led us to think it was necessary to resort to interference, was the evidence of the presence of probable suppuration. The lady had been having slight chills and some corresponding rise of temperature, and we thought it best to be certain whether or no the mass had

decomposed and broken down, so we opened it with the cautery, and quite a quantity of grumous, broken down blood, with clots came out. The lady was relieved of her pain and distress. We introduced a drainage tube, and through this tube passed a large catheter as long as the opening would permit, and washed out the cavity every day and followed it up for a long while, with a diminution in the size of the mass, until it got so that it was merely perceptible above the pubes, then the chills came on again more severely, and after suffering for a month or six weeks she finally died of septicæmia. In that case I was satisfied from the fact of being able to fill the cavity apparently, under the force of hydrostatic pressure, and then have something give way, and the fluid rapidly disappear, that we had a series of cavities which were opening into each other. I think if I had such a case to manage now I should do differently. I should use thorough antiseptic precautions, and care at present; such treatment was not then deemed necessary. The next case, a very interesting one, happened last winter; I saw the lady four or five weeks after she was taken ill. She was taken as though she were going to have a miscarriage after having missed menstruation twice, and when I saw her she was in an extreme condition of collapse; upon examining the abdomen, it was found full of something, dull on percussion, resonant above, and to the sides; on digital examination the ordinary signs of hæmatocèle were present. This woman was in such a weak condition that I could not bring myself to the idea of interfering, and tried to support her and wait for events. I attended her two weeks, while she varied from one condition to another, all the time life hanging by a thread. In the third week, on examining her abdomen, I thought I detected fluctuation, and in

two or three days was certain of it. I aspirated in the *linea alba* midway between umbilicus and pubes, and at first withdrew a quart of blood, but, although I was satisfied there was more there, I did not repeat the aspiration that day. Two days afterwards I aspirated again, and withdrew two quarts. She began to improve from that moment; I merely put her on tonics and supporting treatment; this was in February. I saw her about a month ago, and she was going about the house the same as anyone else. The third case was a little later in the same year, a lady who had been bleeding a little for some time, with the presence of signs of conception of two months' date. I made an examination, and was satisfied that I detected to the right of the uterus a mass as large as one's fist, easily reached by manipulation internally and externally, tense to the touch, and elastic. I diagnosed a probable hæmatocele, kept her quietly in bed, but did nothing special for her. The occurrence of this tumor was accompanied by extreme shock, prostration, pallor of the body and symptoms of collapse. She has now entirely recovered without any interference whatever. That last case led me to think of some of the reports I have read about surgeons being called to see a patient in collapse, finding she has flowed a little, with a history of probable pregnancy, making an examination, and discovering a little tumor, diagnosing extra-uterine pregnancy, using electricity and curing the patient. It seems to me there may be a possibility of there being a mistake in some of these cases of extra-uterine pregnancy that are cured so readily by the use of electricity. They are becoming very frequent. I must say, that it was a very difficult matter for me to decide in this case, whether it was extra-uterine foetation or hæmatocele; still I am satisfied that it was an hæmatocele.

DR. H. T. BYFORD said: Before closing the discussion, I would like to add the following case to the series reported in the paper.

CASE VI.—Mary H., a German servant girl, 25 years old, was taken sick with pains about the lower abdomen, nine months ago. The attack, which came on after a menstrual period, kept her in bed little of the time, but did not pass off. In six weeks, her menses came on and lasted two weeks. The bleeding ceased for a few days, then returned and had continued, in varying quantity, until stopped by ergot about a week before I saw her. Vesical irritation was an almost constant symptom. Up to that time she had tried to attend to her work, but then gave up her place. She told me, a little over a month ago, when I first saw her, that she had felt worse since taking the medicine. The great pelvic tenderness subsided rapidly under the “absolute rest” treatment, and in less than a week afterwards, I was able, without paining her, to completely circumdigitate a large boggy or semi-elastic tumor in the right broad ligament, extending behind the uterus from a level with the internal os upwards, and reaching into the left broad ligament, where it felt harder and nodulated. The uterus was antiflexed, displaced anteriorly, and to the left, (leaving only room enough between the cervix and the pubes for the index finger), and intimately attached to the surrounding mass. The probe entered three inches, turning forwards. After keeping off her feet, although not in bed, using hot douches, iodine applications to the abdomen, iron internally, and having glycerine plugs applied about every three days for three weeks, the tumor had become harder, somewhat nodulated in places, and perceptibly smaller. She had felt quite well again until the last few days, when she undertook to resume her domestic duties.

This case shows well the positive benefit of rest, and the positive harm that is sure to result from want of it. Its history is similar to the history of many such tumors which go on to suppuration, but which, with proper treatment, would have been promptly absorbed.

The unfortunate case related by Dr. Bartlett bears witness to the dangers of the curette in pelvic hæmatoceles, and is probably one among many somewhat similar ones that have not been reported. The necessity of a large opening, perfect drainage and great antiseptic precaution is vividly shown by one of the cases recited by Dr. Parkes. His view as to the liability to the formation of pus pockets is corroborated by the sudden discharge of half an ounce or more of pus on March 26, in the case of Mary H——, followed by the rapid sinking of the uterus back into a natural position. This pus pocket, had the operation *not* been performed, would probably have formed and pointed upwards in the direction of the least resistance, and would have become an abdominal abscess, and a serious thing to manage. I quite agree with Dr. Parkes that simple hæmatoma and hæmatocele are too often thought to result from extra-uterine pregnancy, and think it is partly the result of Gallard's theory that all non-traumatic cases are extra-uterine pregnancies, a theory which has done its good and has had its day. The intensity and persistence of the local symptoms, the passage of the decidua, and the past or present characteristic symptoms of the pregnant condition should usually prevent such a mistake.

I think, with Dr. Jaggard, that Bandl would have us operate too early; I only claimed that Bandl's views were a great advance in the therapeutics of pelvic effusions, in that, while recognizing the dangers of early interference, he does not

allow the fear of inducing septicæmia to intimidate him into waiting until septicæmia has already accomplished its mischievous and perhaps fatal work. The reason why Bandl's latest views have had so little apparent effect upon the profession, is that they have only been before the profession at large for a few months. I had come to the conclusion that with our present knowledge of antiseptics we need not be frightened out of opening up these accumulations; and had acted upon it before I knew of Bandl's views; and so had many others whose veneration for long established authority had not overpowered their individual judgment.

A. Martin's method of operating for hæmatoceles and hæmatoma is *one* method, but that it is *the* method cannot be maintained upon scientific grounds so as to convince the profession; nor has it as yet been so proved by its success. As to the frequent bunglesomeness of operations *per vaginam* and *per rectum*, there is scarcely to be found an opportunity for the bungler like the performance of laparotomy for pelvic disease. I doubt if I exaggerate in saying that half of the abdominal sections are done in a bungling manner, especially when compared to those of Martin and a few others.

In my paper I advocate the expectant plan of treatment, and have used it, and so far succeeded with it, in all of this series of cases except one. That case was operated upon because the conditions for a cure without an operation were not attainable; because even if attainable, they would have taken too much time to restore the patient to usefulness; and because if properly done, the operation in such a case is almost devoid of danger. I regard it as a good illustration of when we may operate in case the expectant plan does not afford relief. In Case VI, Mary H., which I have just reported, I shall use every

effort to do without surgical interference, because the interior of the sac cannot be easily and safely reached.

Protheroe Smith, M.D., M.R.C.P., of London, was then elected Honorary Fellow of the Society.

W. W. JAGGARD, M.D., *Editor*.

2330 Indiana avenue, September, 1886.

ABSTRACTS.

ST. BARTHOLOMEW'S HOSPITAL REPORTS. EDITED BY W. H. CHURCH, M. D., AND JOHN LANGTON, F. R. C. S. *Vol. XXI. London: SMITH, ELDER & Co., 1885.*

The regular articles of the reports are preceded by a List of Subscribers, a Memorial Article on Francis Harris, M. D., late Demonstrator of Morbid Anatomy at St. Bartholomew's, and a reprint of the English translation of "The Book of the Foundation of St. Bartholomew's." In this reprint the spelling of the original translation is retained. According to this book, " * * * the Priory and the hospital by olde tyme longing to the same," were founded in the year 1119, by one Rayer, in accordance with the command to do so, given him in a vision by the patron saint of the institution. Of the twenty-eight chapters in the book, twenty are devoted to descriptions of the miraculous cures accomplished. In addition to the interest which this reprint has for all St. Bartholomew's men, it is interesting as a sample of English prose of the time of Edward II. The reports cover the general field of medicine and surgery, and represent the experience of the Hospital during the year.

The following is a list of the titles of the articles contained in this volume, viz.: On the Amount of Destructive Impulses in the Insane, Cases Resembling General Paralysis of the Insane, Note on Tuberculous Tumors of the Larynx, On the Presence of the Tubercle Bacillus in Old Specimens of Diseased Lung, Profuse Non-Fatal Pulmonary Hæmoptysis, Five Cases of Functional Nervous Disorder, Cases from Mr. Willet's Wards, Notes of Three Cases of Coal-Gas Poisoning, The After Treatment of Tracheotomy, Two Cases of Parasitic Hæmaturia, Some Cases of Sclerosis of the Spinal Cord, On the Nature and Origin of Rodent Ulcer, Clinical Contributions to Practical Medicine, Two Contributions to Renal Surgery, Variola as Seen in the Casualty Department, A Contribution to the Topographical Anatomy of the Spinal Cord, From the Department for Diseases of the Larynx, Cases of Mental Disturbance after Operations, A Case of Lead Poisoning With Bosses in the Metacarpal Bones, Parametritis and Abscess of the Liver, The Formation of Abnormal Synovial Cysts in Connection with the Joints, On the Breath Sounds in Health and Disease, Cases from Dr. Church's Wards, Notes on the Six Gifts of Theophilus Philanthropos or Robert Poole, and Proceedings of the Abernethian Society for Winter Sessions of 1884-5.

Dr. T. Claye Shaw, in his article on "The Forecast of Destructive Impulses in the Insane," states the following conclusions, viz.: "That the destructive state is one result of a certain condition of brain, and may exist in its greatest intensity without consciousness. That it is especially frequent in those cases of brain disease attended with weak or irregular action of the heart. That epilepsy, the insanity of old age, puerperal insanity, masturbational insanity, and imbecility, are liable to exhibit it. That inasmuch as brain disease is rarely

stationary in its extent, and often proceeds insidiously, it is impossible to deny that any insane person may develop the destructive faculty. That persons may be the reverse of a melancholy disposition and yet most suicidal." Dr. Shaw thinks that in most cases the destructive tendency is due to cerebral anæmia, directly caused by irregularity in the action of the heart. In support of his opinion, he says that it exists in many cases of dyspepsia accompanied by irregular action of the heart, and in the cases of masturbators, and that in cases in which the attacks are preceded by depression and melancholy they may be aborted by the use of stimulants. His concluding sentence is, "However great our experience may then be, we are occasionally deceived by the exhibition of dangerous and destructive acts where they were not expected; but if we keep prominently before us the condition of the heart and the vaso-motor system, with especial reference to their causation of a sudden anæmic state of the brain, we have, in my opinion, a trustworthy warning which will justify us in taking steps which we shall find afterwards no reason to regret."

By the term "old specimens of diseased lungs," Dr. Harris refers to specimens preserved in alcohol for many years. He reports examinations of ten specimens taken from the museum, all put up before the year 1846, and some probably as early as the year 1812. The method of staining, which was most successful, was the Ehrlich-Weigert. In one specimen of about the year 1812, no bacilli were found, but in all of the others they were found abundant. Dr. Harris promises a further account of other specimens.

Seven cases of membranous laryngitis, in which the symptoms were sufficiently urgent to necessitate tracheotomy, are reported by S. Herbert Habersham, M.B. Two of these re-

sulted fatally, through conditions entirely beyond control, and independent of the tracheotomy. The cases are reported to illustrate, first, the theory that the treatment of the throat is of much less importance than the nourishment of the patient, and second, to describe the methods used to feed the patients, and to clear the trachea in those cases in which this is necessary. In feeding, during the time when the child will not swallow sufficient food for its nourishment, liquid food was used, and from two to four ounces given every two to four hours, according to the indications in each case. In one case reported, that of a child two and one-half years old, it was observed that just before the feeding time the patient was subject to fits of dyspnœa and coughing, apparently due to exhaustion. Upon the food being given every three, instead of every four hours, these symptoms disappeared, and did not return. The method of introducing the food into stomach is by means of a brass syringe fitted to an ordinary number 4 or 6 English flexible catheter, which is passed through the nose into the stomach. Dr. Habersham says that the introduction of the tube is quite easy. It is indeed difficult to pass it into the trachea, and that when it does it will pass only a few inches, and that the irritation produced is a sure indication for its withdrawal. The introduction is usually easy after the first attempt, and upon one occasion a patient was fed during sleep without being awakened. In introducing the tube the manipulation is exactly that of the introduction of the eustachian catheter. For the purpose of cleaning the trachea, the closed end of a soft-rubber catheter, No. 4 to 6, is clipped off and then connected with a small brass syringe. "It is rapidly passed through the tracheotomy tube down the trachea as far as possible, regardless of the patient's increased dyspnœa, and firmly nipped by the finger and thumb just outside the opening into the

trachea. The nurse holding the syringe is then directed to exhaust it by drawing up the handle rapidly. When this is done the finger and thumb are suddenly let go, and the whole force of suction is transferred to the end of the catheter in the trachea. The catheter is then slowly withdrawn." The method as described is very efficient, and may be repeated as frequently as necessary and exhausts the child less than its own ineffectual efforts at expiration.

In this, his second, communication on The Formation of Abnormal Synovial Cysts in Connection with the Joints, Mr. W. Marrant Baker calls attention to his first communication, which appeared in the 13th volume of the St. Bartholemew's Hospital Reports. In all of the cases reported in the first paper the knee joint was involved. In the present communication two cases are reported in which the cysts occurred in connection with the shoulder-joint, two with the elbow-joint, one with the hip-joint, and one over and below the external malleolus. Mr. Baker quotes the conclusions stated in his first report, describes the cases mentioned above, and draws the following conclusions from them:

1. That abnormal synovial cysts may be found in connection, not only with the knee, but in connection with the shoulder, the elbow, the hip, and the ankle-joints.

2. That the manner of the formation of these synovial cysts probably resembles that which has been proved to occur in connection with the knee-joint, namely, that the synovial fluid, upon reaching a certain amount of tension, by accumulation within the joint, finds its way out in the direction of least resistance, either by the channel by which some normal bursa communicates with the joint, or, in the absence of any such channel, by forming first a hernia of the syno-

vial membrane. In both cases, should the tension continue or increase, the fluid at length escapes from the sac, and its boundaries are then formed only by the muscles and other tissues between and amongst which it accumulates.

3. That in the case of the shoulder-joint the abnormal synovial cyst may be found either in front a little below the clavicle, or in the upper arm in the region of the biceps muscle.

4. That in connection with the elbow-joint the cyst is usually placed on the inner side, a little above the internal condyle of the humerus.

5. That in the case of the wrist-joint the synovial cyst may be either in front or behind.

6. In the only case in connection with the hip, in which a note has been preserved, the swelling was in the upper part of Scarpa's triangle.

7. In the one case in connection with the ankle-joint the synovial cyst was in front and to the outer side.

8. That the apparent want of direct communication between the joint and the abnormal synovial cyst is frequently deceptive, and should not lead to the inference that no such communication exists.

9. That the caution given in the previous communication, not to interfere by operation with these synovial sacs without good reason, has been justified by increased experience. "Hitherto I have not discovered any relationship between the form of osteo-arthritis with which some of these synovial cysts are associated, and locomotor ataxy, but I suspect that in some of them a relationship will be found to exist."

The article contributed by Mr. Bullar, "On the Breath Sounds in Health and Disease," is an extension of an account

of some similar experiments which appeared in the Proceedings of the Royal Society, No. 234. The article is accompanied by illustrations of the apparatus used, and the details of the experiments made very clearly described. The nature of the investigations is so technical that a condensation of the article cannot fairly represent it. The author claims, and has proved, that the vesicular murmur is produced where the smallest bronchioles open into the vesicles. The experiments further showed that a lung either moderately filled or distended with air, not itself in motion, is a poor conductor of sound, while one moderately or fully collapsed is a fairly good conductor.

The experiment to determine how the vesicular murmur is produced, resulted only in the negative conclusion that it is not by the movement of the tissues of the lung—Mr. Bullar's article is well worthy of the attention of all who have a special interest in the subject discussed.

"Statistical tables of the patients under treatment in the wards of St. Bartholomew's during 1884," finish the volume, and the whole is furnished with a fairly good index.

E. WING.

ON THE RADICAL CURE OF OBLIQUE INGUINAL HERNIA BY INTERNAL ABDOMINAL PERITONEAL PAD, AND THE RESTORATION OF THE VALVED FORM OF THE INGUINAL CANAL.
By WILLIAM MAC EWEN, M. D., of Glasgow, in "Annals of Surgery," August, 1886.

The author's operation is distinguished by his treatment of the sac and method of closing the inguinal canal. After preliminary shaving, disinfection, anæsthesia, and reduction of the hernia, the initial incision is made downward and inward,

exposing the external ring. The sac and contents are also explored, the abdominal aspects of internal ring, and position of the epigastric artery. The distal end of the sac is then freed, the sac is pulled down and separated from the cord and the canal, and outside of the sac the peritoneum is detached, with a finger, for half an inch around the whole abdominal aspect of the circumference of the internal ring. A catgut thread, single, and fastened at the distal end of the sac is run in and out several times through the sac, then carried on a hernia-needle through the abdominal wall, except the skin, and brought out at the opening made by the incision. An assistant pulls on this thread, gathering the sac into folds, which form a corrugated pad on the abdominal side of the internal ring. The pad is held in place by traction until the sutures closing the canal are introduced, when the thread is secured. To close the internal ring, an oblique single-thread stitch is taken, with a hernia-needle, in conjoined tendon, from its lower border to the highest point possible. The loop is on peritoneal side. The thread-end, from the lower puncture-point of the stitch, is carried, with a hernia-needle, at a point directly opposite, through the Poupart's ligament and the aponeuroses of the transversalis, and the internal and external oblique. The thread-end from the upper puncture-point, at a point opposite, through the transversalis and the internal and external oblique. The two ends are tied in reef-knot. Stitches may be taken lower down, if necessary, and in uniting the pillars of the external ring care should be taken in tying not to compress the cord. There should be superficial drainage, with permanent dressing, and elastic compression.

In congenital hernia the sac is freed from the canal, opened and divided transversely in two, preserving the cord. The lower part is formed into the *tunica vaginalis*, the upper part

is pulled down and split longitudinally for the cord to escape, and is closed by sutures and treated as the sac of acquired hernia. The author prefers catgut for sutures; fourteen to twenty-one day catgut for the deep and for pad, and seven-day catgut for the superficial stitches. Usually but one re-dressing is required. Union is complete in from fourteen to twenty-one days, and the patient is allowed to get up in from four to six weeks. He has thus operated thirty-three times for radical cure of inguinal hernia, in fourteen other cases, after relief of strangulation, and applied the principles in nine cases of femoral hernia, after relief of strangulation. In no case was the operation made where there was a distinct approach to gangrene of the bowel, nor where the sac was firmly adherent next to the femoral vein. There have been no deaths in the series. Firm primary occlusion was obtained in all. There were but few cases of suppuration, and only one was severe. Of the thirty-three, exclusive of two, too recent cases, only one had subsequent need of truss, and that was more from habit. Of the fourteen, three wore a pad and bandage, as precautionary. After the femoral hernias, no truss has been worn.

MARY E. BATES.

BOOK REVIEWS.

DISEASES OF THE DIGESTIVE ORGANS IN INFANCY AND CHILDHOOD, *with Chapters on the Investigation of Disease and on the General Management of Children.* By LOUIS STARR, M. D., *Clinical Professor of Diseases of Children in the Hospital of the University of Pennsylvania, Physician to the Children's Hospital, Philadelphia, etc. With colored plates and other illustrations.* Philadelphia: P. BLAKISTON SON & CO. Chicago: W. T. KEENER. 1886.

Dr. Starr's latest work, like his other writings, is pre-eminently practical and interesting. Its object, as set forth in the preface, "is to give prominence to a class of disorders constituting a large proportion of the ailments of childhood, but often too briefly considered in works on pædiatrics."

The book is exactly what it professes to be, viz., a monograph on the buccal, gastric, and intestinal lesions of children, no unimportant part of their ailments. It opens with a discussion of the clinical investigation of the diseases of childhood in general, which, while it is good and comprehensive, embraces very little that is new, except, perhaps, the hints in the sections on methods of drinking observed in children.

Section second opens the consideration of the diseases of the digestive tract with those of the mouth. More is here made

of catarrhal stomatitis than the experience of the majority of general practitioners would justify. In fact, Dr. Bush would probably claim Prof. Starr's catarrhal stomatitis was really his œsophagitis under another name; and Dr. Starr's treatment really looks that way, as it is apparently directed more towards the gastric than to the buccal mucous membrane. Aphthous stomatitis evidently is considered to have the same ætiology, for it is similarly dealt with, and chlorate of potash, which in these cases is almost a specific, is only spoken of as a local application. On the other hand, it is highly recommended in ulcerative stomatitis, where, unfortunately, it generally disappoints, whether given internally or locally applied. Perhaps the fresh air and stimulants so highly spoken of in the treatment of these cases may have had much to do with the success of the potassium chlorate treatment, which under other surroundings would have failed. Noma, thrush and the sympathetic troubles of difficult dentition conclude the diseases of the mouth and present nothing new or of especial interest in either theory or practice. The affections of the throat discussed are simple pharyngitis, catarrh of the tonsils, follicular tonsilitis, abscess and hypertrophy of the tonsils and retropharyngeal abscess. Unlike Professor Pepper, he regards follicular tonsilitis as always favorable in prognosis, and only by the most inexperienced to be confounded with diphtheria.

There certainly is very little resemblance between the irregular follicular deposits of the first and typical diphtheritic membrane; and yet it ought always to be kept in mind that about these innocent, cheesy dots diphtheritic membrane may and often does form, and that, whether or

no there is a specific virus about them, they not infrequently attack the members of a family in succession, even when they have not been exposed to what Dr. Starr considers their most efficient cause, viz., a children's party.

The section on the affections of the stomach and intestines is the best in the book; its special value being in the very great care taken in the preparation of special diet tables for particular forms of indigestion. Dietetic rules in these cases are too often so general that it is exceedingly satisfactory to find an author explicit in his directions as to exactly what and when the child shall be fed. This is what Dr. Starr does emphatically, whenever the question of diet is an important factor in the treatment of the case, and some of his diet tables, as that for mucous disease, are models of their kind and invaluable. In fact, the book might be justly entitled "The Dietetics of Children, Sick and Well," so largely does this feature appear—and wisely, too, we might add—for success or failure in treatment of a sick infant often turns on as seemingly an unimportant matter as a few inches of dirty rubber tubing in a lazy mother's nursing-bottle, to which, by the way, Dr. Starr pays his respects, and advises that in every case of a bottle-fed child the physician should insist upon seeing, himself, the bottle used in feeding. The work abounds in just such common-sense hints, and is both timely and helpful to all who have occasion to treat children. Its differential diagnoses are pre-eminently practical, and its pathology full enough for any one except the pedant who prefers its minutiae to success in practice. At times scarcely care enough has been taken to make his mixtures palatable for children, and his use of stimulants is freer than would be pleasing to the Weeks-Burnett combination; but these are

trifling defects, if any, and Dr. Starr's *Diseases of the Digestive Organs* is a valuable addition to the American literature of pædiatrics.

M. P. H.

ELEMENTS OF SURGICAL DIAGNOSIS. *By* A. PEARCE GOULD, M. S., M. B., *Lond.*, F. R. C. S., *Eng.*; *Assistant Surgeon to Middlesex Hospital, etc.* Large 16mo, pp. 584. *Philadelphia*: HENRY C. LEA'S SON & CO. *Chicago*: A. C. McCURR & CO.

This effort presents in a concise form the symptoms of many surgical diseases, and groups together those diseases which have certain symptoms in common, pointing out the method of making the differential diagnosis between them. Its chief value lies in its plan of arrangement, making it a practical ready-reference book for refreshing the memory of the young practitioner or advanced medical student. The points made by the author are based upon a sound knowledge of the principles and practice of surgery.

The writer deserves credit for the systematic presentation of the various subjects.

F. C. S.

MANUEL DES INJECTIONS SOUS-CUTANÉES. *Par* BOURNEVILLE, *Médecin de Bicêtre, et* BRICON, *Docteur en Médecine.* 2me Edition, revue et augmentée. Duodecimo, pp. xl, 200. *Paris.*

The second edition of this work is a proof that the method of treating by hypodermic injection is becoming quite common, at least in Europe, whether due to success or to the good nature of Europeans in giving themselves for experimental purposes.

Hypodermic injections being not free from danger of inflammation and abscesses in many cases, it would not be well

for a beginner or inexperienced physician to use many of the drugs which are only on trial yet, and from which the results are variable, and often dangerous.

Attention is called to the new drugs and the best vehicle for each one; also how to make hypodermic injection in order to avoid accidents; the care of the syringe, etc.

The hypodermic method may commend itself to the physician who is fond of experiments; but it may not be found equally so for the patient who is sick from a disease which requires frequent administration of medicine hypodermically.

The reader is left to conjectures, as the author does not state whether he believes that the hypodermic method will be the one *par excellence*, or only to be resorted to when it is impossible to introduce medicines into the system through the stomach. Aside from this the book is a good one and well written.

D. D.

MANUEL DE TECHNIQUE DES AUTOPSIES. *Par* BOURNEVILLE
et P. BRICON. *Duodeceimo*, pp. xii, 240. *Paris*.

This is an interesting work on post-mortem examinations; when and how to make them.

For internes in hospitals, this little volume is an invaluable guide; but in private post-mortem examinations, as well as those performed before a class, it would be impracticable to observe all the details suggested by the authors. In many cases time is too limited to admit it.

In order to profit most by it, post-mortem examination ought to be made as soon after death as possible.

This volume has two objects in view—

1. To attract attention to the importance of careful ob-

servation in autopsies, and to encourage correct teaching of pathological anatomy.

2. To teach students to make better and quicker post-mortem examinations in hospitals.

The work is clear and concise, and deserves to be welcomed by physicians and students, and especially by the pathological anatomist.

D. D.

THE BLOT UPON THE BRAIN. *Studies in History and Psychology.* By WILLIAM W. IRELAND, M. D. (Edin.) New York: G. P. PUTNAM'S SONS. Chicago: W. T. KEENER. Octavo, pp. viii, 374. 1886.

This work is made up of a number of sketches and short articles which have appeared from time to time in the *Journal of Mental Science* and in *Brain*. Most of the historical essays are of great interest, notably those treating of the hallucinations of Mohammed, Luther and Swedenborg; and paper four, on the insanity of power, as illustrated by the Claudian-Julian family, Mohammed Toghlak, and Ivan the Terrible. The value of the book depends upon the value of each essay. There is no connection further than a common binding and an index. The reader will find much of value, that he will look for in vain elsewhere.

H. N. M.

TRAITE ELEMENTAIRE D'ANATOMIE MEDICAL DU SYSTEME NERVEUX. Par CH. FERE, *Médecin-adjoint de la Sapêltrière, Paris. Aux Bureaux du Progrès Médical.* Octavo, pp. 493. 1886.

The reader expecting to find in this work anything original, or valuable discussions on the mooted points in cerebral

anatomy, will be greatly disappointed. Yet the work is of value and should be translated into English, as we have no similar work in our tongue. The merit of the work lies in its clear and concise arrangement, and the successful application of anatomical facts to the elucidation of diagnostic problems,—the grand difficulty for the beginner in neurology.

H. N. M.

A MANUAL OF THERAPEUTICS. *Considered with Reference to Articles of the Materia Medica.* By EDWARD JOHN WARING, C. I. E., M. D., *Fellow of the Royal College of Physicians, London.* Edited by DUDLEY W. BUXTON, M. D., B. S. (Edin). Philadelphia: P. BLAKISTON, SON & CO. Chicago: W. T. KEENER. *Fourth edition.* Small octavo, pp. xxix, 666. 1886.

In too many cases we pick up a so-called "new edition" of an old work and find it merely a reprint; this is not, however, the case with the present one. It has been thoroughly revised, and much new matter added. The searcher will find almost all the latest therapeutic novelties that have stood in any way the test of experience. The references to the literature of the subject are very full and, with the well arranged index, add much to the value of the work.

MEDICAL AND SURGICAL DIRECTORY OF THE UNITED STATES. *Published by R. L. POLK & Co, Detroit.*

This work contains the names of all the physicians in the United States, arranged alphabetically and by localities. In addition the local and state laws relating to physicians and

public health, medical colleges, medical journals, national, state and local medical societies, and, in fact, all information relating to physicians is given in a very full manner. The work is well arranged and easy of reference. It represents an almost incalculable amount of work in accumulating the data upon which it is based, and is of great value to physicians and to others. The publishers deserve a substantial return for the good work they have done in preparing and issuing this directory, which seems to be exceptionally accurate.

THE METHODS OF BACTERIOLOGICAL INVESTIGATION. *By* DR. FERDINAND HUEPPE, *Docent in Hygiene and Bacteriology in the Chemical Laboratory of R. Fresenius at Wiesbaden.* Translated by HERMANN M. BIGGS, M. D. *Octavo, pp. 218.* New York: D. APPLETON & CO. Chicago: A. C. MCCLURG & Co.

The translator was induced to present the work of Dr. Hueppe to the American public because of the want in English of a satisfactory text-book for the students working under his direction in the Carnegie Laboratory.

Of theoretical and polemical treatises on bacteriology there is no lack, many of them having been written by those who do not understand the first principles of bacteriology, and who could not give any idea of the relative value of solid and fluid culture-media. To such the careful study of this volume might prove advantageous.

The work is written largely from the standpoint of the Berlin School by a pupil of Geheimrath Koch, and presents many of his peculiar views and methods. It is divided into

seven parts respectively: 1. Spontaneous generation and the principles of sterilization. 2. Forms of bacteria and microscopical technique. 3. Culture-methods. 4. Inoculations for the determination of the casual relation of bacteria-growth to decomposition and disease. 5. General biological problems. 6. Special hygienic investigation. 7. Bacteriology as an object of instruction.

As a text-book it is clear and concise, and we trust will do much to stimulate the study of this important branch of biological research in this country. The English of the book could in many cases be criticised, but one familiar with the curt idioms of the original will readily overlook this.

H. N. M.

ESSENTIALS OF VACCINATION : *a compilation of facts relating to Vaccine Inoculation and its Influence in the Prevention of Small Pox.* By W. A. HARDAWAY, M. D., 12mo, pp. 145. St. Louis: J. H. CHAMBERS & Co., 1886. Chicago: W. T. KEENER.

The author has succeeded in presenting the most essential facts of vaccination, in a limited compass, and in an agreeable manner. The necessity for this book is apparent in the erroneous views held by many of the profession regarding vaccination, and the careless manner in which the operation is too often performed.

Great stress is laid on the efficiency of vaccination in estimating the protection afforded. Marston's tables are quoted, in which he clearly proves that the best vaccination is some thirty times more protective than the poorest. The author clearly gives his preference for bovine over human-

ized virus, in which it is probable that the majority of the profession in this country will agree with him. Excellent instruction is given in the methods of obtaining and storing virus, and also the manner in which the operation should be performed. Here the work seems to be open to criticism. He advises the use of a *clean* lancet, or else the ivory point, in scarifying, which is recommended rather than puncture or incision. Nothing is said about the arm being clean, also the hands of the operator, and using Lister's protective, and a layer of antiseptic cotton confined by a wire vaccination protector; in other words, carefully protecting the wound from all external infection. The adoption of this precaution will, we are sure, exclude many of the untoward results mentioned in the book. The work closes with a concise account of the principal objections to vaccination.

THE BEST PRELIMINARY EDUCATION FOR THE STUDY OF MEDICINE. *By* EDWARD S. STEVENS, M. D. *Being the* BOYLSTON PRIZE ESSAY, 1885. *The Western Star Print, Lebanon, Ohio.*

The opening sentence of this work reads: "This essay will be written from an American standpoint." It would have been more correct to have said, this essay will be written from the standpoint of one individual American, and addressed to a select *coterie* of medical gentlemen in an eastern city. In marked contrast to the narrowness of this work is the comprehensive view taken of the subject of American medical education in the address delivered before the British Medical Association at its last annual meeting by Dr. J. S. Billings.

Incidentally, we may express a doubt as to the general utility of prize essays, and of this one in particular.

MEDICINE OF THE FUTURE. *An Address prepared for the Annual Meeting of the British Medical Association in 1886*, by AUSTIN FLINT (SENIOR), M.D., LL.D. *New York*: D. APPLETON & Co. *Chicago*: A. C. McCLURG & Co.

This memorial volume is beautifully issued by the Appletons, on extra heavy paper with wide margins and double leaded lines. An excellent autotype of the author faces the title page.

The address itself must excite widespread attention, as the last work of one of the most commanding figures in American medicine.

PRACTICAL HUMAN ANATOMY. *A Working-guide for Students of Medicine, and a Ready Reference for Surgeons and Physicians*. By FANEUIL D. WEISSE, M. D. *Illustrated by 222 lettered plates, containing 321 figures; pp. vii, 456*. *New York*: WILLIAM WOOD & Co., 1886. *Chicago*: W. T. KEENER.

The author has made a determined effort to overcome some of the chief difficulties surrounding the study of practical anatomy. That he has succeeded in a great measure, is disclosed by even a superficial examination of the work.

It is divided into twenty-seven dissections, each one of which consists of a descriptive text, followed by the plates necessary to its illustration. These latter are rendered especially valuable to the dissector by the plate references in the text. The student is thus enabled to verify his work by the plates, and to advance without confusion through the different parts of a dissection.

Twenty of the plates are selected from various works, and the remainder are reproductions of original drawings made from the author's own dissections. Too much praise cannot be given this part of the work, both for accuracy and high mechanical finish.

The publishers have issued the work in a creditable manner.

A MANUAL OF AUSCULTATION AND PERCUSSION; EMBRACING THE PHYSICAL DIAGNOSIS OF DISEASES OF THE LUNGS AND HEART, AND OF THORACIC ANEURISM. By AUSTIN FLINT, M. D., LL. D., *Professor of the Principles and Practice of Medicine and of Clinical Medicine in the Bellevue Hospital Medical College, etc., etc.* Fourth Edition, thoroughly Revised and Enlarged. Illustrated with fourteen woodcuts. Duodecimo, pp. xii, 280. Philadelphia: LEA BROTHERS & CO. Chicago: JANSEN, MCCLURG & CO., 1885.

This manual no longer requires extended notice. The celebrity of its author and the merit of previous editions assures for it continued recognition as an authority on the subjects of which it treats. The different physical signs, together with the normal and pathological conditions on which they depend, are first described, and then the various diseases of the chest are discussed in relation to differential diagnosis by physical examination; an arrangement which furnishes to the practitioner a means of ready reference, and to the student a useful reiteration of the contents.

Discussion of doubtful points in the mechanism of signs is expressly waived. This is very well for the sake of brevity, but unsatisfactory in other particulars. One naturally inquires

why a vesiculo-*tympanitic* resonance is obtained by percussing over the condensed lung above a pleuritic effusion.

The book is written in a pleasant colloquial style, calculated to enhance the interest of the reader, while at the same time the phraseology is clear and concise. W. E. C.

MANUAL OF OPERATIVE SURGERY. By LEWIS A. STIMSON, B. A., M. D., *Surgeon to the Presbyterian and Bellevue Hospitals, Professor of Clinical Surgery in the Medical Faculty of the University of the City of New York, etc.* Second Edition, with 342 illustrations, pp. 506. Philadelphia: LEA BROTHERS & CO. Chicago: JANSEN, McCLURG & CO.

In this interesting and practical work, which is in its second edition, the principal changes from the former edition will be found, as the author states in his preface, "in the manner of operative procedures brought about by the anti-septic method of treating wounds, and of excision of bones and joints, and operations in which the peritoneal cavity is opened." The directions for operations are clear and concise, and sufficiently minute in details and in the regional anatomy of the parts, to be easily understood by all who have a reasonable knowledge of the subject.

The illustrations, which are three hundred and forty-two in number, are especially worthy of note, as they are well executed, and many times make a more clear and lasting impression on the mind than could be gained by a study of the text alone. The typographical work in the book is very good. F. W. C.

BOOKS RECEIVED.

Causes de la Morbidité et de la Mortalité de la Première Enfance. Par le Docteur Emil R. Coni, Imprimerie de Paul Emile Coni, Buenos Ayres.

A System of Practical Medicine by American Authors. Volume V. Diseases of the Nervous System. Philadelphia: Lea Brothers & Co. Chicago: A. C. McClurg & Co.

A Reference Hand-book of the Medical Sciences. Volume III. New York: William Wood & Co. Chicago: W. T. Keener.

Handbook of Practical Medicine. By Dr. Hermann Eichorst. Volume II. Diseases of the Digestive, Urinary and Sexual apparatus. New York: William Wood & Co. Chicago: W. T. Keener.

An Introduction to General Pathology. By John Bland Sutton, F.R.C.S. Philadelphia: P. Blakiston, Son & Co. Chicago: W. T. Keener.

The Genuine Works of Hippocrates. Volume II. Translated by Francis Adams, LL.D. New York: William Wood & Co. Chicago: W. T. Keener.

Diseases of the Stomach and Intestines. By Professor Dujardin-Beaumont. New York: William Wood & Co. Chicago: W. T. Keener.

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ORIGINAL COMMUNICATIONS.

A CASE OF INJURY FROM A STRONG ELECTRIC CURRENT. *By*
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eases of the Nervous System and Lecturer on Physiology,
Rush Medical College.

The rarity of injury occasioned by the passage of strong electric currents through the body, and the silence of the standard text-books on surgery regarding this class of injuries, shall be my excuse for presenting what would otherwise seem to be a case of little interest. With the widening of the application of electric currents in the mechanical arts, and electric lighting, must come an increase in the number of these accidents, and a corresponding interest in their surgical and medico-legal relations. I do not remember to have seen a single case reported in which an injury of this kind has been made the subject of a legal inquiry, but, with the increased exposure to violence of this kind, it must soon be recognized, and we shall doubtless shortly have a special department of "electric surgery," similar in many respects to the "railroad surgery" of today.

On the evening of August 5th last I was called to see S. C., a laborer, well developed, muscular, and of a healthy, robust appearance. I found him lying in bed bathed in a cold perspiration. His skin was pale and of a leaden, ashy hue. The pupils were widely dilated and reacted but feebly to light. He was partially delirious, though when pressed to do so he would give fairly rational answers to questions. His pulse was about 100, feeble, and slightly irregular. The heart sounds were normal, though its action was somewhat hurried and irregular. His temperature was $97\frac{1}{2}^{\circ}$ F. Nausea and vomiting were constant; everything taken into the stomach was immediately rejected. On the outer aspect of the knee, about one inch from the patella, was found an oval opening three-fourths of an inch long and one-half an inch wide, extending below the deep fascia. The opening had sharply defined edges which were not everted. The opening showed an actual loss of substance, as though made with a punch. There was very little hæmorrhage at that time, and it was stated that there had been but little. On the posterior aspect of the thigh, in the middle line, just above the popliteal space, a round, button-like eschar, about one-half an inch in diameter, was found. The eschar was of a blackish-brown color, and seemed to involve only the skin, and to be freely movable on the tissues beneath. Careful examination failed to reveal any displacement of the bones or ligaments, but I was unable to assure myself that the synovial membrane of the joint was not involved in the solution of continuity. The possible gravity of this wound of the knee induced me to send the patient to the Cook County Hospital, after having applied a temporary dressing. This course was necessary, from the fact the patient lived in lodgings, and had no one to attend to his wants. At the hospital the wound healed kindly, and in a few days he was

again on the street. The eschar on the posterior aspect of the thigh separated, leaving a deep fistulous track extending forwards and downwards, which at the end of five weeks had not yet healed, and long after all other evidence of injury had disappeared.

It was after the patient left the hospital that I obtained full particulars of the manner in which the accident occurred. He was engaged in adjusting one of the arc lights of a thirty-light circuit of the Van De Pøele system. At the time he was standing on a step-ladder a few feet above the sidewalk, his foot slipped, and in attempting to save himself he grasped both of the side wires of the lamp. For an instant at least a portion of the current passed through his body. It is hardly conceivable that a current of this intensity could pass through the body without causing instant death, and I am of the opinion that a portion at least must have still passed through the lamp. In falling his knee came in contact with an iron railing, and the current was grounded. As he expressed it, "the fire flew from my knee to the rail." The injuries above described were directly due to the passage of the current from the leg to the rail. The chief difficulty experienced in this case was in forming an adequate idea of the extent of the injury and its probable outcome. One of the singular features of the case, and one which I would not *a priori* believe, is that a current of sufficient intensity to produce such extensive local injury could pass through the body without causing instant death. I think a report of a case was given in the *British Medical Journal* some three years ago, of a similar "grounding" of a current which caused instant death, and that the local injury in that case amounted to only a slight charring of the outer aspect of the little finger.

434 West Adams Street.

ABSTRACT OF A REPORT MADE OF A VISIT TO THE HOSPITALS OF PARIS AND PASTEUR'S LABORATORY. *By*
CHARLES WARRINGTON EARLE, M.D.

[Read before the Chicago Medical Society, October 4, 1886.]

After my arrival in Paris, the Hospital Lariboisière was among the first that I visited. It is a large structure, containing 875 beds, and is situated in the northeastern part of the city. It was constructed in 1854, entirely of stone and brick. It has several pavilions and squares as well as gardens and chapels within its walls. The building is of historic interest in many respects, and still bears the scars of German cannon balls received during the late war. The obstetrical department is divided into an inside and outside service, with about thirty-five hundred confinements in both. Midwives do the work on the outside, and send for the hospital staff if assistance is needed. The severe cases needing operation are brought into the hospital and kept there until they have recovered. Every morning a large number of patients are brought in by the midwives to be examined by the resident physicians; if any complication is found, they are retained in the hospital. The wards are kept aseptic in every respect. Carbolic acid is distributed in dishes, and in many cases a spray of the same substance is used. The beds are all of iron, and are washed thoroughly from time to time with a solution of corrosive sublimate. The floors are of a stone and plaster composition, and the walls are roughly finished with not the faintest attempt at ornamentation. The antiseptic precautions are not equal to those taken in the hospitals of Germany and Italy, but they are in advance of those in England.

The favorite antiseptic is the biniodide of mercury in a strength of one part to two thousand of water. Pinard is the obstetrician, and his methods are peculiarly French. They dislike to use any method or instrument devised by a German. Tarnier's forceps, with certain recent modifications, by which they can be more easily rendered aseptic, are used, and the basotribe, a combination of the perforator and cranioclast has recently been added. When a diagnosis of breech presentation can be made early, before the escape of the amniotic fluid, version is performed. The general result of this treatment has not as yet been announced. I am, however, in possession of some facts which would make it appear that it is not the best procedure. In cases of contracted pelvis, labor is induced between the sixth and seventh months, and the prematurely delivered child is placed in the incubator, its life being saved as a rule. In Germany, Austria, and probably Italy, these cases would have some form of abdominal section performed upon them. The contrivances for keeping up the body-heat of prematurely born infants were very interesting to me. I did not see Credé's apparatus, which consists of a copper tube with double walls so arranged that hot water can be introduced, and a high temperature maintained, but I did see Tarnier's incubators in operation. The principle upon which they are constructed is very simple, and it seems to me that we should be in position to utilize it. They consist of a square box so made as to prevent the loss of heat, the top of which is covered with glass. In the upper half is placed a thermometer and a little basket of soft clothing for the child. Under the basket is an arrangement for the introduction of hot air, which may be supplied either

from the heating apparatus of the building, a gas jet, or hot water in bottles. For the youngest children the temperature is kept from 100° to 105° F.; for those between seven and eight months from 85° to 100° F. Where possible, the children are always fed with breast-milk and are not handled or exposed more than is absolutely necessary. A sloughing uterine tumor or other case in which blood-poisoning may happen, is treated by constant irrigation; water, either pure or slightly medicated, is passed into the cavity for days and often weeks, thus effectually washing away all putrid matter and guarding against infection.

I was shown an instrument recently devised by Tarnier for inducing labour. It was an ordinary catheter upon the end of which was a little bulb with exceedingly thin walls. The instrument is introduced into the cavity of the uterus, the bulb distended with water and allowed to remain until uterine action begins.

The Maison de Accouchements is Tarnier's own hospital. Formerly it was a Catholic institution, and as far as the building is concerned it is not at all in accord with recent ideas of what a hospital should be. Everything possible, however, is done to make the place aseptic. Every bed is isolated in some degree, and furnished with its own irrigator, the permanganate of potash being the drug used. Carbolic acid is sprayed in the wards at all times. The bedsteads and chairs are all iron. The floor is of stone, and the ventilation is by means of fireplaces. Tarnier has just completed a small ward from plans of his own which, in all probability, is the most non-absorbing building which has ever been erected. It is made of brick and mortar and stone, the roof of the porches is made of glass, the window-frames are all iron, and as far as

I could see not a particle of wood entered into the construction of the building. It is only 24x45 feet, and so arranged that one attendant upon each floor can look into the four wards from a shaft which is constructed in the center. This is to economize help and give to each patient constant watchfulness and care.

The Hospital Bichât is situated directly upon the fortifications. It was built for barracks, and has only recently been converted into a hospital. Terrier is the surgeon. The building is of stone with a perfectly hard and non-absorbing material for floors. The carbolic acid spray is used, and a very great amount of it is used in each surgical dressing. Operations for hernia seem to be a kind of specialty here, though many laparotomies are performed. It is in this hospital that Pean extirpates the uterus, sometimes without the use of a single ligature. He has had constructed for him, long hæmostatic forceps with different shapes and curves, and if an artery is cut high up, which it would be difficult to ligate, it is at once seized with one of these forceps, the instrument left in place for one or two days, when it sloughs away.

The Hospital Tenon is another institution which I visited. It is very large, is kept scrupulously clean and has an obliging staff of attendants who delight in showing one over the building.

Among those who are doing good work in Paris I should mention Apostoli, who is experimenting with electricity. He is an enthusiast, and, perhaps, claims too much for his process sometimes, but he is withal very modest. He read a paper before the Copenhagen Congress which was well received, and since then he has been quietly prosecuting his researches. He treats particularly uterine fibroids and believes

that, by using his zinc disc covered with a layer of sculptor's clay, he gets a degree of intensity in his current that gives better results than by any other means. The power of his current is simply immense, and those who have watched him treat his cases and seen the results, claim that he really accomplishes nearly every thing which he claims. Not only does he treat fibroids, lessening hæmorrhage and diminishing the growth, but exudations, etc. He is confident that by his process those conditions from hæmorrhage, etc., for which it is believed, on the Continent, that the uterus should be extirpated, can be cured, and the operation which certainly in our country is not regarded with special favor, can be avoided.

I could not leave Paris without visiting Pasteur's laboratory. During the forenoon I had the opportunity of seeing a large number of people inoculated with the virus, and in the afternoon I was permitted to visit his laboratory and witness the entire process, from chloroforming and inoculating a rabbit, up to the time one perished with all the symptoms of hydrophobia. His dispensary was hardly what I expected to find, as it was smaller than the number of patients demanded. There was not the care taken in preserving the histories of cases which the importance of the work merits, but it is possible that this was attended to in the earlier days of the experiments. Pasteur is here during the forenoon, but does very little except exercise a general supervision over the entire work. There are three rooms in which this is performed, one a large waiting room, another a kind of surgery where dog bites are dressed, and a third room where the inoculations are being carried on. About a hundred each day were being inoculated at the time of my visit,

and they were there from almost every inhabitable country upon the globe.

A very brief history of Pasteur's experiments from 1880 up to the present time may not at this time be amiss. Since that time the interest in the subject of hydrophobia has been greatly increased and its study diligently pursued. Many have been the investigations to find the nature of this subtle poison, but probably no one has exhibited the patience and had the means to prosecute his studies equal to Pasteur. He had achieved great renown and placed the world, and particularly his own country, greatly his debtor by his discoveries concerning the diseases of the silk-worm. His conclusions in regard to anthrax and chicken-cholera had also been given to the public, and he seemed to be the man to undertake the investigation of hydrophobia. In 1880 a child died of hydrophobia in the Trousseau hospital, in Paris. Four hours after its death the mucus about the palate was collected and two rabbits were inoculated with it. They died in thirty-six hours, and the saliva from these rabbits produced hydrophobia in others of their kind. It seemed then as if the discovery had already been made that the poisonous element of hydrophobia was in the saliva and nowhere else, but Pasteur proceeded further and examined the saliva with the microscope, and in every case he found a special microbe. He undoubtedly believed at this time that he had found what would in every case produce hydrophobia, but others continued to examine the saliva, and, while the microbe of saliva from hydrophobic patients was easily cultivated, and when injected into rabbits caused disease varying with the quantity injected, it was also found that healthy saliva when injected into the veins also

produced symptoms closely resembling hydrophobia. At this time I think the theory of a special microbe was dropped. But the work went on until 1884, and experimenters tried to find whether the poison was in the saliva or the blood, or in the central nervous system, when Pasteur read his paper before the Copenhagen Congress, and stated that it was in the medulla in which the disease is found most concentrated, and since then the virus for commencing the process is taken from this point.

The entire procedure as it is here practiced has been gone over time after time, and is as follows: Take the medulla from a dog which has died of rabies, crush it and put it in sterilized bouillon with all antiseptic precautions, and you are ready to make the first injection into the brain of a rabbit. A rabbit is placed upon the operating table, is chloroformed, the top of its head shaved, an incision made through the integuments, with all antiseptic precautions, the bone trepanned and about two drops of virus is injected under the membranes of the brain. In nine days this rabbit commences to be sick, is paralyzed in its legs, and in thirteen days dies. Rabbits do not seem to suffer at all, and the wounds which are made to inoculate them usually heal in about twenty-four to thirty-six hours. From this rabbit's medulla you inoculate another. This rabbit commences to be sick in fifteen days and dies in eighteen, until finally after nine or ten inoculations the incubation period becomes constant at about eight or nine days, but the virus becomes much stronger than it was when taken from the dog who first died from rabies. That is to say, the virus is so strong that the initial symptoms of hydrophobia commence in about seven days in place of from twenty to forty days as they do when a person is bitten by a mad dog. This, then, is the first principle. Pasteur

believes he has demonstrated that the further removing of the virus in a rabbit the stronger it becomes. The medulla from these last rabbits in which the virus is so strong is now taken out, hung in an empty jar, the bottom of which is covered with caustic potash. It is here allowed to remain for twenty days. A little piece of this cord is put into sterilized veal broth and rubbed up, and from one to two drops injected into the rabbit. The second injection is made in the same way, only the medulla is allowed to remain in the jar two days less. The third injection is made after the medulla has been allowed to remain in the jar two days less than the third, and so on for eight or ten injections, when it is believed that the virus which has been introduced into the system by a rabid dog has been neutralized and immunity insured. The second principle which has been demonstrated is, that if the virus be allowed to remain in a glass jar, suspended over caustic potash, for twenty days, it may be injected with impunity into the muscles of human beings, and that the virus when suspended two days shorter time is a little stronger and less poisonous to the individual. In the main what Pasteur tries to demonstrate is that by carrying on a series of successive inoculations he simply renders the poison of hydrophobia inert in the individual. He does not attempt to cure the disease after symptoms have commenced their development. At the time of my visit he had inoculated eighteen hundred people, and there had been subscribed to his institute more than \$270,000.

If I am asked what the majority of scientific people on the continent think in regard to Pasteur and his cure for hydrophobia, I should say that the majority of those replying would say, "We are waiting." It is not believed by many that the problem is solved. They have, however, great confidence in

Pasteur, and believe that at the proper time he will announce the truth.

A commission has been appointed from Great Britain to investigate and report, and pending this we must all wait. There is, however, an intense interest in the subject in most of the countries of the old world, and there are those who expect that either by this process, or some other, hydrophobia will become a disease of the past.

There are men in training today who will examine the feasibility of vaccinating or inoculating every dog within certain boundaries, in the hope that immunity from the disease will be established in these animals, and the constant danger to man avoided.

535 Washington Boulevard.

ABSTRACT OF A REPORT OF A CASE OF CARIES OF THE RIGHT PARIETAL BONE, CAUSED BY A RAILWAY INJURY. *By* AUGUSTUS V. PARK, M.D., *Chicago, Member of the American Medical Association, etc.*

[Read before the Chicago Medical Society September 6.]

The case I have to present this evening is that of Edward M., aged 16 years, of medium height, stout, healthy and well nourished, by occupation a book-keeper. The family history on the father's side is good; the mother is now in the insane asylum at Jefferson. On the evening of September 18, 1883, while riding home from work, he attempted to cross the railroad track at the Twenty-sixth street crossing, but was compelled to wait until a long out-going freight train had passed. He then started to drive across the track, and at this moment his horse was struck and killed, instantly, by an incoming express train which was running at a high rate of speed, over the Grand Trunk Railway's tracks. The young man was

found one hundred feet down the track, and north and east of where the horse was killed. He was carried from the place to a little cottage near the track, and I saw him in a few minutes. I found him unconscious, with pupils widely dilated, the pulse hardly perceptible, feeble and intermittent, breathing slow, and drawn at intervals. The features were ghastly and the face cold and pale. I examined the more extensive wounds and controlled the hæmorrhage. He was removed to his home, at Twenty-fifth street and Prairie avenue. There I made a careful and very thorough examination. His clothing, which was torn in shreds, was removed, and the following wounds were found: A contused and lacerated wound three inches wide on the back, two inches to the right of spinal column, and extending from the posterior superior spine of the ilium upward to the spinous process of the seventh dorsal vertebra. Lacerated and contused wounds were found above and below each elbow, and a large contusion on the left gluteal muscle. There was injury to the coccyx, causing long and continued coccygodynia, and the lower extremities were bruised in many places. A contusion existed on the right side of the forehead, extending from the orbital arch upward three inches. There was a V-shaped wound over the left ear, and, also, a large semi-circular wound on the top of the head, nearly in the centre of the right parietal bone. This wound, as well as the one over the left ear, extended through the scalp, the pericranium being stripped off in places. The wounds about the head and face were filled with sand and dirt. The scalp-wound was thoroughly cleansed, and the cranial wall carefully examined for fracture. The edges were then approximated as nearly as possible and closed with interrupted silk sutures. All the other wounds were cleansed and dressed with iodoform and carbolized cosmoline. The pupils of both eyes continued widely dilated, the left larger than

the right. There was no vomiting or hæmorrhage from mouth or nose or ears. The shock was so great that it resembled collapse.

Twelve hours after the accident I found the patient still unconscious ; his temperature was 100° F., pulse 90, respiration 20. The wounds were all redressed. The tissues about the head and face were œdematous and the eye-lids puffy and closed.

Twenty-nine hours after the accident, his temperature was 102° F., pulse 112, respiration 20, and his face and scalp were becoming more and more œdematous. The patient was semi-unconscious, restless, and passed his urine voluntarily. I gave a hydragogue cathartic and quinine in three grain doses combined with iron. A lotion of the acetate of lead was used externally.

Forty-four hours after the accident, his temperature was 103.50° F., his pulse 120, and his respiration 20 to 22. He was delirious, and the condition of the face and scalp was unchanged. The wounds about his head and face were secreting but slightly.

Professor Daniel T. Nelson, their family physician, saw the boy in consultation with me and made a careful examination of the wounds of the head, and particularly the cut above the left ear and the one on the top of the head. He could not detect a fracture, or depression of the cranial wall, and advised that drainage-tubes be introduced. This was done and the dressings were re-applied as before. The quinine and iron were continued and the lotion applied externally as before.

The railway company's surgeon saw the boy with me and was permitted to examine the wounds for fracture, but with

negative results. As regards treatment, he had nothing to suggest. The face and scalp became more and more œdematous ; the lips, nose and ears were greatly enlarged ; the eyes entirely closed, and the face of a light purple color.

The symptoms subjectively and objectively at this time, and for the next fourteen days, remained nearly the same. I will state, however, that the highest temperature observed was 103.8° F. There was but slight discharge through the drainage-tubes for two or three days, and they were removed on the fourth day after insertion. When the boy commenced to regain consciousness memory was greatly impaired and he could not distinguish one person from another.

On October 4, seventeen days after injury, his temperature was 99° F., his pulse 90, and respiration 18, the œdematous condition of the face was subsiding, the ecchymosis fading away and patient, by making an effort, could partially open the eyes. He complained of pain on the top of his head, and the dressings were removed and the wound examined. Several small pockets of pus were found. They were broken down with a probe and the wound washed with a two per centum carbolyzed solution and dressings applied as usual ; all the other wounds had commenced to close by granulation.

On November 26, seventy days after the accident, I detected and detached a piece of exfoliated bone, the entire thickness of the external plate, and the size of a three cent piece. This piece of bone was removed through a fistulous canal which led down to it. The dressings were applied twice daily, yet the wound refused to close up as all the others had done, and denuded bone could be felt with the probe. I ad-

vised an immediate operation for the removal of more of the dead bone if present. To this his father would not consent, owing to the danger of erysipelas attacking the patient after the operation.

On December 17, ninety-two days from the day of the injury, at my request, Professor Daniel T. Nelson again saw the patient with me, and we decided to operate. At three o'clock p.m., the patient was brought to my office. I was assisted by Professors Daniel T. Nelson and R. W. Bishop. Mr. Hugo von Hermonn, Mr. Shoeneman, Mr. Meyer were present. A grooved director was inserted into the fistulous canal, and carried down to the cranial wall and the scalp slit up. This incision was then lengthened by a free cut, two inches down to the diseased bone, and the scalp and pericranium, which were thickened and hypertrophied, were drawn apart. Hæmorrhage was free, owing to the great vascularity of the part. The cranial wall was found in a carious condition over a much larger area than we expected to find. I was compelled to enlarge the incision in each direction before all of the diseased bone could be reached. This condition extended through the external table and I removed with a curette the diseased bony tissue down to the diploe, over an oval shaped area two inches and a half in width by three and a half in length. The hæmorrhage from the diploic veins was not great.

On December 18, at eight o'clock a.m., his temperature was 101° F., his pulse 90, and respiration 18. The patient complained of severe pain in the back and sides of the neck and of headache, and there was slight evidence of approaching facial erysipelas. The dressings were removed and the discharge was free and the drainage as complete as could be desired.

On December 19, his temperature was 103° F., his pulse

110, and respiration 22. He still complained of severe pain in his head and neck, with a burning sensation over the entire face and scalp. His eyelids were again closed and puffy. On removal of the dressings a partial suspension of the secretion from the wound, and a complete arrest of the adhesive process were found. Medication for the erysipelatous complication was continued.

On December 21, at eight o'clock A. M., his temperature was 100° F., his pulse 90, and respiration 18. The patient seemed to be improving in every way. His face and scalp were less cedematous, and the wound had commenced to slough to such an extent that some of the stitches were washed away with the carbolyzed solution. We now had a gaping wound an inch in width by four inches in length, which was cleansed, and its edges approximated as nearly as possible and held in position by compresses and bandages.

On December 25, the patient was without fever or pain. His pulse and respiration were normal. The wound was secreting healthy pus and the granulations had a healthy appearance, and the patient was taken to his home.

On February 4, one hundred and fifty-one days after the accident and forty-nine days following the removal of carious bone, the patient was discharged and the result obtained is quite as good as could reasonably be expected. Much was accomplished in this case in preventing a large and unsightly cicatrix by keeping up a series of carefully applied bandages and compresses. None of the compresses were applied directly over the wound, but in such a manner as would approximate the granulating edges.

411 Twenty-sixth Street.

NOTES ON HOSPITAL PRACTICE IN VIENNA. *Abstract of a paper by FRANK BILLINGS, M.D., Lecturer on Physical Diagnosis in the Chicago Medical College.*

[Read before the Chicago Medical Society, October 18, 1886.]

In the medical wards of Professor Nothnagel, the temperature of important cases is taken every two hours by the nurse, by placing a non self-registering thermometer of the centigrade scale in the axilla for five minutes. From the temperature markings charts are made and kept at the heads of the beds.

Examination, chemical and microscopical, of the urine is made of all cases upon admission to the hospital, and daily examination of important cases.

The tests used are the following:

For albumen: the heat test, and the acetic acid and ferrocyanide of potassium test.

For peptone: sulphate of copper and hydrate of potassium (as in Trommer's test for sugar), giving a violet color if peptone is present. Albumen must be proven to be *absent* by the above two tests before making the test for peptone, for albumen gives the same reaction to the peptone test.

For blood: the addition of potassium hydrate and heating precipitates phosphates, which are colored red or reddish when blood is present. Microscopic and spectroscopic examinations are also made in doubtful cases.

For bile: hydrochloric acid and hydrate of potassium are added to urine, in about equal amounts, giving a green color to the whole mixture when bile is present.

The well-known nitric acid test is also used.

For indican: to urine is added a small amount of hydrochloric acid, one drop of a five per centum solution of hypo-

sulphite of lime and a small amount of chloroform; the test-tube is then shaken and the chloroform allowed to settle to the bottom of the tube. When indican is present the chloroform will have a blue or bluish tint. The presence of iodides in urine of a patient undergoing treatment with iodine or iodides will give a violet or reddish tint to the chloroform, in the above test.

For sugar: Moore's, or Trommer's tests are used. In doubtful cases the Fischer-Jaksch test is employed. It consists in dissolving phenyl hydrocene (a chlor-hydrate of phenyl) gram 1, sodium acetate gram .750 in water 10 c. c. in a test-tube by warming and adding about 25 c. c. of the suspected urine. The mixture is evaporated to one-half its bulk over a water or sand bath, and a precipitate occurs if sugar be present. Microscopically, this precipitate is seen to be composed of yellowish or yellowish-brown, acicular crystals, arranged in fan-shaped forms. It will detect gram .001 of sugar in 1000 c. c. of urine, *i. e.*, one millionth of one per centum.

The presence of aceto-acetic acid, *Diacetone*, is considered of great importance in prognosis of continued fevers, eruptive fevers, diabetes mellitus, and pyæmia or septicæmia.

To prove the presence of aceto-acetic acid it is necessary to first find acetone in the urine,—a body always present in high fevers, according to Dr. von Jaksch.

To find acetone, add to the urine a sufficient amount of sodium nitro-prusside to give a Bordeaux color; then add strong acetic acid, drop by drop, which gives darker rings, where the acid comes in contact with the fluid, if acetone be present.

Or, distill the urine; add a small amount of iodine, iodide of

potassium and hydrate of potassium; heat, and a precipitate, or odor of iodoform will occur if acetone be present. Having proven acetone to be present, add to the urine the tincture of the chloride of iron. This gives a violet color if diacetone be present. This color disappears upon the application of heat, or upon standing for twenty-four hours. The presence of salicylates in the urine gives the same color upon addition of tincture of iron, but the color does not disappear upon heating the urine, or in twenty-four hours.

Diacetonurea indicates a grave or guarded prognosis.

Tuberculosis in some form is very common in Vienna. Tubercular lesions are found in nearly seventy per centum of the deaths! It masks and complicates other diseases and occurs so frequently that it is called *Mortuis Vienensis*. In cases where physical signs are insufficient to arrive at a diagnosis, the presence of tubercular bacilli in the sputa, urine, feces or discharge from a wound, is taken as positive evidence of tuberculosis.

Until 1878 or '79, Vienna secured water from the Danube. Since that time the water is brought by aqueduct from mountain springs about eighty miles away. Typhoid fever was endemic and at times epidemic when Danube water was used. Dr. Jaksch is authority for the statement that not one case of typhoid fever has developed within the city since the new water supply was completed.

A few cases of typhoid fever, brought from the surrounding country, are to be seen in the wards.

The treatment of typhoid fever is expectant. Cold baths of 75° to 80° F., and when this is not sufficient as an antipyretic, an occasional dose of quinia, antipyrin or thallin is used.

During the stage of *lysis* the same medical antipyretics are used more continuously to make the fever abate more rapidly.

Acute articular rheumatism is treated by the administration of salicylic acid gram. 10 to 24 in the first twenty-four hours ; half that quantity daily for the next three or four days, and then gradually diminishing doses. Salicylate intoxication occasionally occurs, manifested by delirium and erythema of the skin.

Large doses of benzoate of sodium ; gram. 20 to 30, even gram. 60, daily, are also used in rheumatism. Lobar pneumonia receives no antipyretic treatment whatever,—and often no other treatment. Alcohol is given freely to sustain the heart when necessary, and wet-cupping or leeching over the affected lobe for *pain*. Wet-cupping or leeching is often practiced for an anodyne effect in local inflammation,—perityphlitis pleurisy, local peritonitis. Urethan is used as a hypnotic in place of chloral, or morphine. In cases of enfeebled and irregular heart-action due to valvular disease, myocarditis, etc., nitro-glycerine in doses of gram .001 every four hours, or caffeine citrate or salicylate gram 1.0 daily, are used.

In cases of dyspepsia from weak or irregular heart-action, due to valvular disease, adhesive pericarditis, etc.; with chronic venous congestion of liver and kidneys, scanty urine, and general dropsy, as a result, small and frequently repeated doses of calomel are given to increase the amount of urine.

In the obstetrical wards of Professor Carl Braun one large room is used for delivering patients. Each student or physician practicing in the ward is allowed to touch but one patient until her labour is completed. The hands of those practicing in the ward are rendered aseptic, by a thorough washing and brushing, and then immersed in a one per centum solution of permanganate of potassium ; they are rendered still more aseptic and bleached by an immersion in a ten per centum solution of hydrochloric acid.

Multipara, in normal labour, are allowed to assume any position they choose in the second stage, and but little care is taken to support the perineum.

Primipara are placed upon the left side, and the perineum is carefully supported by the well-known German method.

In normal cases vaginal douches of two per centum watery solution of carbolic acid or corrosive sublimate, 1 part to 4,000 of water, are used immediately after labour and daily thereafter until discharged.

In all cases where the hand or instruments are inserted into the uterus and in cervical or perineal lacerations, after closing the rents an intra-uterine douche of one of the above named solutions is given immediately, but is not repeated unless fever, or offensive lochia occur; a daily vaginal douche only being given. Puerperal convulsions are treated by immersion in hot bath for a variable length of time; rectal injections of chloral gram 1.0 are given, and repeated after each convulsion, and also hypodermic injection of morphine. As a rule no attempt is made to bring on labour by artificial dilatation of the os uteri. I saw one case treated as above; labour occurred in twenty-four hours, resulting favorably to the mother and child.

Abortion is treated upon the principle of non-interference. Rest in bed is enjoined until the embryo presents itself in the cervical canal, when it is enucleated by inserting a Ferguson's speculum; the cervix being received within the proximal end of the speculum, then by upward pressure upon the speculum and counter-pressure upon the fundus uteri from the hypogastrium the ovum is forced into the speculum intact. If hæmorrhage occur a colpeurynter is inserted, and ergot is sometimes given. If the embryo is discharged and the placenta remain no interference is practiced for three or four

days—until partial separation by fatty degeneration has occurred—when it is partially or wholly removed by enucleation as described above, or by the finger or forceps. If sepsis and fever call for interference, the placenta is wholly or partially removed by forceps and the finger and intra-uterine douches given.

Four cases of corrosive sublimate poisoning occurred last year: two each in the wards of Professors Carl and Gustavus Braun. The solution used was 1 part to 4,000 of water. All died with symptoms of inflammation throughout the whole alimentary tract. The autopsies revealed ulceration throughout the upper portion of the tract, with blackened, necrosed mucous membrane, almost gangrenous in the colon and rectum.

In the surgical wards of Professors Billroth and Albert the smallest details of cleanliness are scrupulously practiced. The operating-room of Professor Billroth is aired and cleaned daily. The floor is so constructed that all liquids flow to the center of the room and pass away through a grating. The floor is scrubbed and douched thoroughly every day. Two reservoirs are placed high on the wall, containing a one per centum solution of carbolic acid, and a rubber tube attached to it carries the solution to any part of the arena for irrigating wounds. The operator as well as assistants and nurses are clothed in fresh linen, and having a long ulster of linen worn outside. Their hands are thoroughly brushed and washed in a one per centum solution of carbolic acid. The patient is prepared by a bath and fresh clothing. The part to be operated upon is thoroughly scrubbed, shaved and irrigated with a one per centum carbolized solution. Sponges are thoroughly cleaned and bleached, and, with all towels, napkins and silk sutures are boiled for one hour in a five per centum solution of carbolic acid, and are then placed in a clean five percentum solution of

carbolic acid for *fourteen* days, the solution being changed every two to four days before use. During an operation all instruments are kept in a two and one-half per centum solution of carbolic acid. Urethral and uterine sounds, clamps and other non-cutting instruments used in laparotomy are kept in a ten per centum solution of carbolic acid in glycerine during the operation, but are dipped into a two and one-half per centum watery solution immediately before use.

Cutting instruments are thoroughly rubbed after cleaning, and, if used about infecting pus, etc., are heated in flame and sent to polisher before being used again. Rubber drainage-tubing is soaked in warm water for one day, then placed in a five per centum carbolized solution for two or three days, when they are changed to a fresh solution, and are fit for use after two weeks. The carbolized solution is changed every two weeks. A solution of corrosive sublimate one part to 1,000 to 2,000 of water is used for irrigating wounds in place of the one per centum carbolized solution.

Powdered iodoform or boracic acid is placed over a closed wound or packed into an open one. Iodoform, carbolized or sublimated gauze is used next to the wound with boric or absorbent cotton, impervious mackintosh and a plain or aseptic roller bandage over all. An adhesive iodoform gauze, impregnated with colophonium, a resinous residue in distillation of turpentine, is used in operations about the face, where parenchymatous hæmorrhage occurs.

Other antiseptic preparations used in the clinic are: iodoform plaster, a mixture of iodoform, glycerine and mucilage of gum arabic, spread upon linen, for covering abrasions and for purposes for which ordinary adhesive plaster is used; iodoform glycerine, 10 to 20 parts to 100, for injecting ab-

scesses after aspiration; iodoform collodion, 1 part to 10, for covering abrasions and superficial wounds; iodoform bacilli, consisting of iodoform 20 parts, pulvis acacia, glycerine amyllum, of each 2 parts, made into bacilli of different sizes for insertion into fistulæ and deep wounds which cannot be irrigated or well cleansed.

Professor Kaposi treats lupus by repeated application of fused nitrate of silver to the tubercles, the stick of nitrate of silver being gouged deeply into the diseased tissue.

Syphilis, in the first and second stages, is treated by inunction of unguentum hydrargyri; gram 2.0 to 4.0 daily for twenty-four successive days, being rubbed into the skin of back, abdomen and inner surfaces of extremities. A solution of potassium chlorate is used to allay any tendency to stomatitis mercurialis. Mucous patches are touched with lunar caustic, and covered with spray of iodoform in ether.

From 2,500 to 3,000 deaths occur in the hospital annually. Autopsies are held upon all. Tubercular lesions predominate. Abscesses and echinococcus cysts of the liver are often seen. Amyloid degeneration of the liver, spleen and kidneys is common, and amyloid degeneration of muscles, especially of the heart, is occasionally seen.

Pure bacterial cultivations are made from the bodies of those dead from typhoid fever, pneumonia, erysipelas, septicæmia, pyæmia, glanders and tuberculosis. Experimental inoculations are made upon lower animals from these cultivations.

Bacteriological laboratories are also maintained in the departments of surgery, medicine, skin diseases, specific diseases, and in the polyclinic.

235 State Street.

EDITORIAL.

A POSSIBLE NEW FIELD IN SURGERY.

An editorial in a recent number of the *Medical Record* contains some very interesting observations on the organization of foreign bodies within animal tissues. The conversion of bone drainage-tubes, and even sponge, into organized tissues has been observed repeatedly, but these substances are all highly organized, and that they may receive a blood-supply and become connected with the surrounding tissues is not surprising.

The article quoted by the *Record* is from the pen of M. Vanlair in the *Revue de Chirurgie*, and relates to the organization of a rubber tube used in some experiments in the tube suture of nerves. The tube was of ordinary gray caoutchouc, having been in position for seven months and a half. The upper end of the tube was intact, and it gradually tapered downward until it was finally lost in the surrounding tissues; a portion of the tube having evidently undergone partial absorption.

On microscopical examination the rubber was found to have lost entirely its amorphous appearance, and to have given place to a rather dense connective-tissue framework, within the interfascicular spaces of which were found irregular cells of about twenty micro millimeters diameter, with a large nucleus, containing one or more nucleoli. The capillary network was extensive and, in many places, presented the ordinary endothelial lining. At its lower part the tube had become assimilated to the surrounding connective-tissue, and had finally disappeared.

The *Record* observes in conclusion: "That india rubber can thus become organized is the more remarkable when we consider that it is a pure vegetable exudation, devoid of all structure, and seemingly more calculated to act as a foreign body and to prevent the union of wounded surfaces than to undergo organization and to become thus an integral part of the animal tissues."

In a report read before the California State Dental Society,* Dr. William J. Younger describes the following case of implantation of a tooth: "In the early part of March, 1886, a lady, the wife of a well-known dentist, brought me a bicuspid that had been extracted at her solicitation, in Sacramento, on the thirty-first day of January, 1885, in the belief that it was the seat of a neuralgic pain, which had been the cause of great anguish to her. This tooth, brought to me after this long lapse of time, had in the meanwhile been carried about in her portemonnaie, stowed away in her jewel case, and shuffled about in her bureau drawer, and this tooth she wanted replanted in her jaw! My first impulse was to laugh, my next to argue with her about the impossibility of success of such an operation, explaining to her that it was due only to the vitality of the membrane covering the root that the operation owed its success; that without this living membrane the tooth was as impossible of attachment as so much bare ivory or porcelain."

The doctor finally consented to do the operation as an experiment; accordingly, on the 11th day of March, 1886, a socket was drilled, and after soaking the tooth in warm water for about twenty-five minutes it was replaced in the position from which it had been taken thirteen months and eleven days previously. The tooth became firmly fixed. Since this first experiment, teeth that had been extracted for months have

* Abstract *Weekly Medical Review*.

been implanted, and with such success that the procedure will probably become one of the recognized operations of dental surgery.

While a few isolated facts of this kind prove but little, yet when added to previous observations of a similar nature they make a substantial advance in our knowledge. The various operations of plastic surgery, the skin and sponge-grafting, and even the *bizärre* operation of sheepskin-grafting attempted in the Cook County Hospital a few years ago, all suggest the possibilities of the surgery of the future, with additional knowledge of the substances which are most readily assimilated and easiest to become integrals of animal tissues; the best methods of proceeding in the application of such substances, and the manner in which their vitality is maintained, and connections made with previously formed tissues. In the light of the above facts one may not be going beyond proper limits in the use of "scientific imagination" in predicting that the time may come when in many more cases the connective-tissue corpuscles necessary in the repair of all tissues may be supplied from other sources than that of the chylopoietic system of the patient.

The immunity from wound-infection already secured by modern antiseptic methods, and their seeming influence on the healing process would appear to leave but little to be desired. That other advances may yet be made in the direction indicated, in the future, seems not improbable.

THE INTERNATIONAL MEDICAL CONGRESS.

The Executive Committee of the Congress, to whom has been entrusted the work of organizing, met in Pittsburgh on October 11. The meeting was fully attended, and the various reports of the sub-committees and the extensive correspondence of its chairman all showed the advance made in the organization of the Congress. The presidents of all of the Sections of the Congress reported highly satisfactory progress in the appointment of sectional officers, and promises of original papers of a high class. The various officers of the Sections, including members of the Council, now exceed three hundred and seventy-five well-known members of the medical profession in the United States. Numerous appointments to Sections have also been accepted by prominent members of the profession in Great Britain, France, Belgium, Holland, Germany, Brazil, and other countries; so that there can now be no doubt as to the international character of the Congress.

Among those recently accepting office as Vice-Presidents of the Congress, we note Sir B. Walter Foster, President of the Council of the British Medical Association; Mr. Ernest Hart, Editor of the Journal of the British Medical Association; Sir Thomas Longmore, Surgeon-General (retired) of the British Army; Sir Joseph Fayrer, Surgeon-General of India; Mr. John Eric Erichsen, Sir Dyce Duckworth, and Mr. Jonathan Hutchinson, of England; Professor Dujardin-Beaumetz, M. Bouchut, M. Cadet de Gassicourt, and M. Grancher, of France; Professor Moncorvo, of Rio de Janeiro; M. Servais, of Belgium; Alfred Vogel, of Germany, with many others equally well known.

The Executive Committee will continue to prosecute its work, with the object of maintaining the honor of the profession in the United States, and making good the invitation given and accepted in 1884 at Copenhagen.

Arrangements are under consideration for reduced fares on steamships and railways, and in hotels.

THE MISSISSIPPI VALLEY MEDICAL ASSOCIATION.

Since the last meeting of the Mississippi Valley Medical Association, medical journals in different parts of the country have expressed the opinion that the association was to be made for the west what, by some it is charged that "The Association of American Physicians" is designed to be for the east, viz., antagonistic to the American Medical Association. In view of the action taken by the Mississippi Valley Medical Association, at the Quincy meeting this year, it is difficult to understand how such an impression has been created. The Mississippi Valley Medical Association has been in existence (formerly under the name of the *Tri-State Medical Society*) for a number of years, and it is a working society. It has never had to do with medical politics, and at its last meeting it adopted the code of ethics of the American Medical Association as part of its constitution to remove the unjust impression regarding it, as shown at the last meeting of the American Medical Association at St. Louis. The society, it is true, embraces many members of the medical profession in the Mississippi Valley, but it in no sense attempts to antagonize the national association.

SOCIETY REPORTS.

CHICAGO MEDICAL SOCIETY:

Stated Meeting, September 20, 1886.—J. F. TODD, M.D.,
SECOND VICE-PRESIDENT, in the chair.

PROFESSOR N. S. DAVIS gave his

IMPRESSIONS OF THE BRITISH MEDICAL ASSOCIATION.

An abstract of his remarks is as follows:

The British Medical Association held its recent meeting at Brighton, the most fashionable and desirable watering place in England, very favorably situated for such a meeting of the profession of that country, being accessible to London as the great central point and having accommodations that probably cannot be found in any other town or city of moderate size in Great Britain. The British Association impresses one as being a body of men more advanced in life than the American Medical Association, not more intellectual development but more of what perhaps might be called sturdy physical development. Indeed this impression of solidity is forced upon the mind about everything.

The British Medical Association is not a representative body, in any sense, but was composed originally much after the fashion of calling together an assembly, organizing a national body and selecting a certain number to constitute a council and submitting the business affairs to the council. Subsequently a rule was adopted by the original council qualifying the profession in any given locality to form a local society and adopt such rules as were not in opposition to the

constitution and by-laws of the national society; these societies were recognized as branches, and each member of a branch became nominally a member of the general body, with the right to attend the general meeting, but not entitled to take part in the general government. Each branch may elect one, two or three members of the council, so that as branch after branch has been organized, and the membership has increased, it has greatly enlarged the council, until, I gather from the proceedings of the Association, the council of the British Medical Association numbers seventy-one. This council has the entire control of the organization; they determine the places of meeting, and all matters in reference to the workings of the organization come before them first. Certain matters are brought before the general body at their meeting for their sanction, but they must originally go through the council. The council has at least four stated meetings in the year; they meet every quarter, and if business of importance is to come before them they may have other meetings. At the annual meeting of the Association the programme is so arranged that when they open at half-past twelve (they do not hold sessions in the forenoon), the council of the preceding year holds an hour's session. New members of the council are elected by the branches yearly, so that new members come in each year and others go out. Following this meeting, at two o'clock is the time for the meeting of the general body, but that did not occur this year; it was crowded out. At a subsequent hour we had what they call the council of the present year. The first meeting was the council of 1885, the next the council of 1886. The Sections held no meetings on the first day. I watched the proceedings carefully with special reference to learning what might be of use to our own National Association. One of the complaints made against us is that

we lose too much time in eating and drinking, and social occasions, and too little advance is made in real science and professional knowledge.

The meeting of the council is held with closed doors. This peculiarity runs through everything. The council not only prepares the reports on business matters, but when they are submitted to the general body the council designates the man to move its adoption and the man to second the motion. I do not think that would be tolerated in America over one meeting, but it is a uniform, regular custom there and they seem to take to it very naturally.

The three sections that had the largest attendance were medicine, surgery and public medicine. They have the same trouble there as occurs in the American Medical Association, there is a certain number of members always coming and going. They come in and sit down, and if at a little distance they can't hear very well, they sit a little while and don't hear enough of the run of the subject under consideration to interest them and they go to another section, so that some are always moving about. Of the pathological and laryngological sections, one was held in the bedroom of King George and the other in what had been his china-closet, capable of seating not more than twenty or thirty people, and these seats were not all occupied. While the attendance does not exceed our attendance, there is about the same shifting and changing as at our general meetings. But the papers that were read had this characteristic to a greater degree than can be said of the papers as a whole with us, those who read papers had taken more pains to prepare them carefully, and to make them cover the ground fully. They had given more care to their preparation.

There is another feature of their meetings. Until the last three meetings of the American Medical Association there has not been any attempt to have parties informed of what particular papers are to be read in any of the sections, so that they might be prepared to lead off in the discussion of the papers. In 1883 in the Medical Section care had been taken to do this. Certain papers were to be read, and several members in different parts of the country were informed that a paper would be read on a certain subject and they were requested to lead in the discussion. The idea was to make the discussions of more value. This same course has been taken in a limited degree in our meetings since then. It is a general practice in the British Association. The officers of the sections, when they learn what papers are to be presented, judge as far as practicable who can impart interest, and have them informed of the general import of the paper and ask them to lead the discussion. Hence they elicit genuine benefit from the papers that are read and from the discussions that follow.

Many papers were prepared that were not read; undoubtedly they will find their way into print, as they do with us; the title was read and they were referred without anybody's knowing what they contained. Sometimes they are presented in abstract; the author thinks he will write it out, but fails to do so. I think in their work they are more deliberate, more complete; they exhaust a subject more nearly, and they endeavor to have the discussion so conducted as to elicit the most information from it. In studying their work as a whole, it seemed to me that there are some things we might copy with advantage.

Some members may be here, who remember the proposition

made in our own national organization years ago when the sections met and chose their officers. A proposition was made to change the by-laws so that the officers of the sections should consist of a president and secretary selected at each annual meeting for the next year, so that there would be officers already elected and the organization of the section would be perpetuated. I remember that the late Dr. Gross made a motion that, instead of having reports from standing committees on medical education, medical literature, and so on, which we had had previously, these committees be dropped and in their stead the association select at each meeting men supposed to be qualified for that especial work, in order to present an address to the general assembly, one on medicine, one on surgery, and one on obstetrics and diseases of women and children. That differed from the British programme only in substituting obstetrics and diseases of women and children for state medicine, but it was designed for the same purpose, to have one carefully prepared address read at each of the three last meetings, one on Wednesday, one on Thursday and one on Friday, while the president of the association would have an address on Tuesday especially designed for the general body. I seconded Dr. Gross' motion, but instead of its being carried, it was referred to a committee, as was also the proposition to have the officers of the sections appointed each year for the next, and at the next year the committee reported in favor of having the officers appointed for the following year. At the same time they reported in favor of having the president of each section present an address to the general body on the improvements in the section over which he presided. That was a substitute for Dr. Gross' motion. He and I opposed it on the ground that the presidents of the sections to be chosen each year ought to be selected from the older men,

giving them an honorable position; but yet they would not be the men that would be likely to be adapted to read such papers. However, the proposition of the committee carried. Now we have seven or eight sections with seven or eight addresses before the general body, and what is the result? We find time the first day for the president's address, but the other days of the general meeting do not afford time enough for all the presidents to read their addresses; they are crowded off to the last day and one-third of the addresses prepared by the presidents of the sections are announced by title only. These addresses crowd the entire time of the general meeting of the body, and I think it would be a great deal better if we were to change our by-laws and appoint the first day for the president's address, which should be of a high order, covering the general field of medicine, another to surgery and another to obstetrics and gynæcology, or public medicine. Perhaps occasionally it would be as well to change the subjects for these addresses. The president of each section might deliver an address on any subject of interest to the section. This would insure a larger attendance and promote the work of the section, and yet would not embarrass the general meeting as it does when we try to get in seven or eight general addresses. That, I think, would be a real and substantial improvement in our body; one that we might copy with profit from the British association. Brief discussion of these addresses, and also of papers presented, might follow in some cases by members previously selected for it.

There has been a good deal said of late years about the work of the nominating committee in our National Association. This committee is appointed in a hurry by little knots gathered together who want to get through. The committee is hurried to do its business, and consequently the business is done very

imperfectly. It has been claimed that we ought to have a more steady and conservative body, and the council of the British Association has been suggested as a pattern, but I do not think an organization like the British council would satisfy the medical profession of this country. I think we would not get along with it two years without rebellion against it. It seems to me, in studying the matter over, that we might remove the real evils we suffer from and yet not incur the evils that would follow from attempting to make a permanent council. It has been suggested that it be so arranged that one man would hold his place nine years. Instead of that, I think all the evils from which we are suffering could be obviated by appointing a business committee to consist of two members from each state in the union. Let each State Society that is represented in the organization be entitled to two members of that business committee and elect them the first year to hold office two years, and after they get started elect one each year, so that it would be permanent. By electing a new member each year it would be conservative and not totally changed. All the work that now devolves on the nominating committee could be done by this business committee, and if selected with proper care, it would be a convenient committee to which might be referred various propositions that come up, and which require careful consideration by members who represent the whole country.

There is an evil in the British council that is complained of now. They say this council has four meetings a year, and they have to meet in London because London is the centre of Great Britain. The practical working of that is that the profession within a radius of one hundred miles of London controls that council. It costs money to go from Edinburgh, Cork, Dublin or remote portions of England to London, and

very few out of the whole number of seventy-one go. I learned that there were seven meetings held last year and thirteen of the members did not attend any of them. Not only that, but the more remote districts have found that their delegates so rarely attend, on account of the expense and loss of time, that half a dozen of them reported that they had not elected delegates. Now, if we were to appoint a permanent body, four-fifths of them would let their interest die out. Suppose a council should be organized that is to meet and transact business three times or even twice a year, how many would be found to go from the Pacific coast or from the north to a central point? It would not take ten years to gravitate so that your council would be in the hands of those within a hundred miles of the central point of meeting. If you made that Philadelphia or Washington or Chicago, the whole body would be ruled by a territory of two hundred miles, simply because parties would not incur the expense and spend their time to attend. They will not in Great Britain, and they are discussing the propriety of getting up some mode of compensating them to induce them to go. The plan I propose will, I think, after some degree of consideration, be found to obviate all the real evils we suffer from in hasty action and hasty nominating committees, and yet it would always secure us a satisfactory working body that would be reasonably representative of the several states, to attend to such things as are required to be attended to, and it would be a standing body of intelligent men to whom we could refer such things as would require consideration. The features that I have mentioned are characteristics that struck me as belonging to the British Association, which differ from ours.

In regard to the International Congress: Without solicitation, the council of the British Association altered the pro-

gramme of one of their days, and announced that on Thursday at a certain hour the delegates from the American Association would be heard in regard to the International Congress. When the time came the hall was fuller than on any other occasion; the room was packed, and through the hallways and along the corridors, with people evidently having a decided interest in hearing what we had to say. As the other Americans insisted on my taking the lead, I went on the platform and occupied half or three-quarters of an hour in simple explanation. I made no allusion to anybody's differences except in general terms. We had had our troubles, and our frictions and our errors on all sides, but out of it all had come an organization truly national in its character, made up of delegates from all the states in the Union. This organization appointed an executive committee, to which had been transferred all further management of the Congress. This national committee had reported their work to the last meeting of the American Medical Association, and it was unanimously sanctioned, and so I felt justified in assuring them that this met the approval of the profession of the United States; and while we had no royal titles, the President of the United States, the heads of departments, and the President of the Senate had lent their names as patrons, and I assured them that they would receive as cordial a reception at that Congress as the American profession knew how to give. I would guarantee that they would be met by the intelligent part of the profession of every state in this Union from the Atlantic to the Pacific, and I cordially invited them to come. They received my invitation with the greatest degree of enthusiasm, and after a few remarks from Dr. Pancoast and others, which simply endorsed what I had said,

they voted us their thanks and accepted our invitation to meet us in congress in 1887. Among some of the most prominent men in London and the provinces there is a warm zeal for attending the Congress. Three or four Americans have been on the continent for some time, and report that in France there is a genuine enthusiasm for attending the Congress. In France they do not pay the slightest attention to any differences we have, and just as far as they imagine there is coldness in England or Germany, the Frenchman comes with the more enthusiasm to make it up.

PROFESSOR W. E. CASSELBERRY read a paper entitled
PHARYNGEAL AND NASAL SURGERY BY THE GALVANO-CAUTERY; WITH REPORT OF CASES AND EXHIBITION OF APPARATUS,

which appeared in the October number of the JOURNAL AND EXAMINER.

PROFESSOR F. O. STOCKTON, in opening the discussion, said he had listened with a great deal of pleasure to the paper; the cases are all very interesting. It does not seem necessary to spoil an electrode in order to make one for a special case; it seems that the ordinary flat electrode, by simply bending it down, would answer the same purpose. The trouble is, we must have new instruments for every case that comes up. Unfortunately, all practicing physicians, many of them who understand the throat and nose, are not so situated that they can run into an instrument maker's establishment at any time and have an electrode made, and it is wise to keep down to the standard instruments, which can be bought at any time and which are always at hand. Another point he desired to speak of is the idea that follicular pharyngitis and adenoid vegetations are one and

the same thing. Some authors consider them the same, and others do not. Bosworth, of New York, claims that follicular pharyngitis and adenoid vegetations are one and the same. The battery which Professor Casselberry shows is one which Professor Stockton had used in practice for three years. He had tried a number of others, and found this one the most satisfactory. A short time ago a modification of it, which is a little better, was devised by Dr. Sajous, of Philadelphia, but it is not on the market at present. Many of our prominent writers have rather discouraged people from using the galvano-cautery, as they say it requires a great deal of skill, and knowledge not only of the anatomy of the part we are working upon, but also of electricity and the management of instruments. Dr. Morell Mackenzie, of London, makes that objection to the galvano-cautery; in fact, he says that all, or nearly all, the operations can be performed by simpler means. Dr. Cohen, in his last work, also refers to the difficulty of managing it, but if they had used the instruments of today they would not have found that difficulty.

DR. H. GRADLE said: The Doctor's paper was so complete there is nothing left for comment, except to deviate from the subject and take excursions into neighboring parts. It has been mentioned that a galvano-cautery is not absolutely necessary. That may be true as far the pharynx is concerned, but in the nose it is not. It would be almost impossible to do the same work as steadily by any other instrument, on account of the excessive hæmorrhage that would occur; these cases are unmanageable except with the cautery, and in most instances we can obtain relief both of local symptoms and obstruction of the nose as well as the nervous symptoms

maintained by the excessive turgidity. The question was asked whether hypertrophy of the pharyngeal tonsil could be identified with follicular pharyngitis; he should say not. We may have one or the other, but the follicles in the disease called follicular pharyngitis are much below the level of the gland. He has often found the gland hypertrophied into a very solid mass of about the consistency of the tonsils. The hypertrophy may of course have any extent; it may be so slight as to leave room for doubt of its existence, while in other cases it is impossible to gain any view of the posterior choanæ. In such cases nothing can be thought of but operation. He has used the cautery in the form of a white hot knife or hot snare for hypertrophy of the pharyngeal tonsil, but not satisfactorily. Where we have a distinctly pedunculated tumor it will do well enough to use the hot snare, but where the tonsil is hypertrophied into a solid mass not at all movable with the probe, he has found very little success with the battery, except that its removal is not so painful as by other means. He has at last settled down on the method suggested by Trautman, viz., a sharp curette, as sharp as the instrument-maker can make it, the shank of which is bent at an angle of 140° . The operation is a barbarous one as far as appearances go, because it requires force. There is pretty free hæmorrhage, but the pain is not very great. Unless the person is pretty tolerant it is not easy to remove the entire tonsil in one sitting, but in children he has not had any greater difficulty in coaxing them to the second sitting than at the first one. The results are extremely satisfactory, especially in cases of ear-disease due to this trouble. He has had considerable experience with different forms of battery; the kind which he prefers and recommends is an accumulator, if a wire can be had from some electric-light plant. He says he can speak well of the

McIntosh battery, but prefers one in which the carbon plates are made of the electric-light sticks. They are much harder than the ordinary carbon plates, and we can easily get a very large surface in the battery.

DR. R. TILLEY said he had had some experience with the cautery and with batteries and is now using the form of battery Dr. Gradle has referred to. He has the two cells attached so as to use them together, and have them so arranged that they can be lifted up with a crank; they are thus very easily manipulated. He has used this battery for about eighteen months, and it has always given satisfaction. He referred to a slight modification in the fluid which he has recently used; it consists in the use of bichromate of soda instead of bichromate of potash. The advantage is that when the fluid has been used for a considerable length of time, in using the potash there is always formed a large number of crystals in the bottom of the cell, which are very hard and require quite a little time to remove; and which are so closely connected with the cell that there is more or less danger of breaking the glass. In using soda instead of potash this does not occur. The compound thus formed is so soluble that no accumulation is formed at the bottom of the cell. He makes all of his own electrodes and uses, practically, wire alone. He sees no advantage in the knife over certain modifications of the wire. In operations in the post-nasal and pharyngeal regions he uses the cautery to burn the tissues completely to the bone. The object in view is to make a cicatricial tissue extending from the surface of the mucous membrane to the periosteum, so as to prevent that tumefaction which frequently occurs and fills up the nares. This tumefaction is quite remarkable sometimes and changes so readily that he has seen the anterior part of the turbinated bone swollen up and a moment after-

wards the swelling gone, so that there could not be any possible reason or justification for using the cautery from the appearance of the tissues at the moment. Yet when the patient lies down at night he finds the nostril on the side on which he is lying so stuffed up that it is almost impossible to breathe. He has found that when the anterior part of the turbinated bone is burned well down to the bone tumefaction rarely occurs afterwards. Then there is a necessity of looking after these burns, especially in the posterior regions. In the anterior aspect of the nose there is only a small amount of mucus coming over the part that is burned, and no difficulties follow cauterization; but when the burned area is situated far back the mucus flows over it, and it not infrequently happens that unless the part is well attended to a certain amount of fungus growth develops in this region. He considers the after-treatment an important factor in cauterizations. He desired to say a word in regard to these adenoid growths in the posterior nares that Dr. Gradle has referred to. Dr. Trautman, of Berlin, removes all these vegetations with the sharp spoon, and claims remarkable success. Dr. Tilley has not seen anything like relatively the same number of cases in his practice that it would seem are met in practice in Berlin. He thinks adenoid growths are more rare in Chicago. With reference to their removal with the galvano-écraseur, he would be disposed to think that the ordinary wire écraseur would be more efficient than the sharp curette, and could be more easily manipulated and more of the growth taken off at the same sitting than with the galvano-cautery.

PROFESSOR W. E. CASSELBERRY, in closing the discussion, said, there were some points on which he wished to add a few words of explanation. In reference to spoiling an electrode in order to make a single loop to treat a special case, he

spoiled the moxa-electrode, because it was an easier way to get the loop than to send to Philadelphia and have one made. As to the merits of the loop over a knife electrode, he thinks that in cauterizing the soft tissue, by taking a small elongated loop and pressing it into the part one gets a slough produced by each parallel wire, and it produces a larger slough with less pain than can be obtained by the knife electrode; the loop will sink further into the soft growth. If a plain knife electrode be used, the slough produced at once under the flat surface of the electrode prevents further effect from its caustic action. He had not only employed the small loop in this particular case, but had found it useful in cases of hypertrophy of the inferior turbinated body where it was unnecessary to cut off a large section by means of the knife or *écraseur*. By simply taking the elongated loop and pressing it against the body, a considerable slough is produced in the center; after this has separated there remains an ulcer, and when the ulcer heals there is cicatricial tissue, which afterwards binds the body down.

In regard to the multiplicity of instruments, of course the multiplying of useless instruments is to be deprecated, but he would call to mind the fact that a large portion of the advance of medical science during the last half century has been directly due to the invention of new and improved instruments and apparatus. If those who devised the microscope, the ophthalmoscope, the laryngoscope, etc., had been satisfied with the "standard instruments" already in the market, we would not now have those most important forms of apparatus. A new instrument should always receive attention, and if it is a real improvement the inventor should be given due credit.

The glandular structures of the vault of the pharynx out of which adenoid vegetations are formed, and the follicles of the

oro-pharynx, may not be histologically identical, but they are very similar in structure; they are both lymphoid tissues, and both exhibit the same tendency to undergo the hypertrophic process and to form similar large masses, which, if allowed to remain, produce morbid symptoms.

He did not know that it is necessary to say anything more in regard to batteries; there are a great many in the market. He is favorably impressed with the one which he uses and it has never failed to work. Although it may not be detrimental to have the plates remain in the fluid, yet, he said he has an uncomfortable feeling when he knows that his plates are being spoiled and the fluid used up faster than they need be. The Sajous battery spoken of is an improvement on the Fleming in this respect, the pedal is not so high from the floor. When one is operating, if he raises his foot to the height of eight inches he is liable to throw himself out of balance and to lose his line of vision. The pedal of the Sajous battery is only about two or three inches from the floor and it is unnecessary to raise the heel off the floor to work it, thus maintaining the balance of the body. The Sajous plates, also, are corrugated, thus giving the most surface in the least bulk. But unfortunately, the Sajous battery is not in the market. The one which Dr. Sajous uses he had made to order, but no doubt it will be put upon the market soon.

The various methods of operating for adenoid vegetations have all the same end in view, that is, the removal of the vegetations. The sharp curette is a good method if the patient will stand the blood, increase of pain and the length of the operation. In the case of children it is a rather difficult method, and requires considerable skill and fortitude on the part of the patient. The case related in this connection was a girl about fourteen years old. He first tried the forceps, but the pain in

cutting off the adenoid vegetations was objected to very strenuously by the patient, and he was obliged to desist. Before he tried the hot snare he tried the cold snare, but found that it took some time to draw up the steel wire and thus squeeze off the vegetation. After the adoption of the hot snare he had no difficulty. The mere introduction of the instrument caused no pain, and after getting it over the vegetation, in two seconds the growth was off, with but little pain and no hæmorrhage to frighten the patient. The treatment of hay-fever by the cautery method, he would like to discuss, but the lateness of the hour did not permit it.

CHICAGO MEDICAL SOCIETY.

Stated Meeting, October 4, 1886.—E. J. DOERING, M.D., PRESIDENT, in the chair.

PROFESSOR CHARLES WARRINGTON EARLE entertained the Society with a very interesting account of his recent trip abroad, referring more particularly to observations made in the

HOSPITALS OF PARIS AND THE LABORATORY OF M. PASTEUR, an abstract of which appears elsewhere in this number of the JOURNAL AND EXAMINER.

DR. CHARLES F. SINCLAIR read a paper on
THE RELATION OF CERTAIN FORMS OF DEFECTIVE VISION TO
HEADACHE IN YOUTH.

He said that the headaches arising from defective vision are very numerous. They possess certain definite characteristics, according to the degree and character of the ametropia. Thus, instead of the usual classification, the oph-

thalmologist might furnish a terminology of his own based upon the condition of the eye. The pain in these cases increases as the errors of refraction become more complicated. A woman had suffered with intensely painful headaches for fifteen years who was found to have mixed astigmatism, and here properly adjusted lenses effected a cure.

It is in childhood and youth especially that these different forms of ametropia manifest themselves in headache. Dr. W. H. Day, of London, however, in his work on the "Nature and Causes of Headache," in which he devotes a lengthy chapter to the headache of childhood and youth, does not mention ametropia as a possible cause.

Nevertheless the eye, among school children, is frequently the cause of all the head trouble. Among American children one form of ametropia is exceedingly common and very disastrous in its effects. It is difficult to detect. It may in certain cases simulate different forms of ametropia, and even normal vision. He referred to a case in which occurs a slight degree of astigmatism under one dioptric.

Maud W., a school girl 14 years old, had suffered with severe headaches. On examination excellent vision was found, but minus lenses improved it and made it normal. After the use of homatropin, however, half a dioptric of hypermetropic astigmatism was found, which was corrected and the headache cured.

Emily R., 15 years old, had suffered with constant headache for a year. On examination, .50 D manifest hypermetropia was found, and only this was corrected, as patient would not submit to the use of atropia. This patient returned in a few days saying that her headaches were as bad as ever, when homatropin was used and a small degree

of hypermetropic astigmatism was found. This being corrected, a cure of the headache was effected.

In another case there were constantly recurring attacks of vertigo and dizziness, together with severe unilateral headache caused by astigmatism, and which properly adjusted cylindrical lenses cured.

These are types of an exceedingly large number of cases where headache can be cured by a weak cylindrical lens. These cases are interesting not only because of their marked consequences, but because of their tendency, in certain cases, to exactly simulate other conditions, and they certainly suggest the advisability, in every case of severe headache, to examine the eye only when under the influence of atropia.

PROFESSOR W. FRANKLIN COLEMAN said that in an examination of the eyes of pupils in Boston, in eighty-nine cases of defective vision fifty-nine were traceable to over-study. Out of this number twenty-five to fifty per centum of the cases of headache which occurred were relieved by supplying suitable glasses. Another class of cases in which headache occurs is when there is weakness of the recti muscles. By supplying proper prismatic glasses this weakness may be overcome, and the headache disappears. Other factors in producing headache are improper light and too low desks, thus causing the pupil to strain the eyes. So far as artificial light to read by is concerned, the incandescent electric light is probably the best, as it most nearly resembles sunlight, and is free from heat, dust and flickering.

PROFESSOR F. C. HOTZ said he believed the authors of such papers as this often exaggerate the importance of their observations. The result is, patients are often advised to go to oculists,

but do not do so on account of the expense, or for some other reason, and the patient therefore receives no treatment. But he has been surprised to see how few cases of defective vision come to him complaining of headache. He has not found it a prominent symptom. In looking over his record of cases he finds a great many cases of astigmatism, hypermetropia, and ametropia, in which the symptoms complained of are difficulty of vision, but not headache. Children often complain of not being able to see the figures on the blackboard, and consult the oculist for that trouble directly. But if a large number of cases of the eyes of children are examined, it will be found that in youth a normal eye is often far-sighted, and yet such persons are able to do the work required. However, in cases of defective vision, accompanied by headache, the defect of vision should be corrected.

PROFESSOR J. E. COLBURN related his personal experience with astigmatism, stating that not only had he headaches, but he could not study well, and these difficulties disappeared with the using of proper glasses.

CHICAGO MEDICAL SOCIETY.

Stated Meeting, October 18, 1886.—E. J. DOERING, M.D., PRESIDENT, in the chair.

PROFESSOR R. W. BISHOP read a paper entitled

IS ALOPECIA PREMATURA CONTAGIOUS?

He thought this disease due to micro-organisms upon the shafts of the hair, and that it is contagious. He has made a series of experiments, assisted by Dr. Oscar Lassar. A typical case was that of a perfectly healthy young man whose head was nearly bald on top. The hair from the diseased sur-

face was brittle and came out easily when pulled. Microscopic examination revealed a large number of fungi on the scalp and the shafts of the hair, the root being free from the parasite. The diseased hairs were cut and mixed with vaseline, which was rubbed on the skin of healthy rabbits, and in two weeks the hair entirely disappeared from the parts which had been rubbed. Experiments were continued, and it was found that the hairs from the inoculated animals possessed increased virulence.

The patient was treated as follows: The head was thoroughly washed for fifteen minutes with tar soap, which was removed with warm water. The head was then exposed to a warm water douche, which was gradually cooled until the water was quite cold; it was then rubbed with a rough towel until dry, and afterwards washed with a solution of corrosive sublimate 1 to 500. This was removed and a $\frac{1}{2}$ per centum of lithol applied, and, after this, 1 $\frac{1}{2}$ per centum of carbolic oil was applied very slowly. The treatment was continued daily for eight weeks, and the result was a fine growth of new hair with beginning pigmentation at the end of three months.

DR. JOSEPH ZEISLER thought this was a disease which possibly might be produced by vegetable organisms. He knew of Professor Bishop's experiments, still there were strong objections to the value of these experiments. Michelson made some experiments by using a mixture of vaseline and rancid oil and rubbing it on the skin of guinea-pigs, and after these inunctions the animals got bald on the places anointed, although neither sick hairs nor scales were used. There are older experiments which show that animals fed on old cheese or hard boiled egg get bald. Another point was, that the disease is so frequently met with in men and so rarely in women, between whom there are plenty of chances for con-

tagion. It is an ascertained fact that the disease most frequently occurs in men who in their earlier years (17 to 25) suffer from pityriasis of the scalp, so that there certainly is a causal relation between this affection and alopecia. After all, he thinks that the contagiousness of this disease is still an open question.

DR. FRANK BILLINGS spoke on

HOSPITAL PRACTICE IN VIENNA, WITH EXHIBITION OF NEW
URINE TESTS, NEW INSTRUMENTS, ETC.,

of which an abstract appears in another part of the JOURNAL
AND EXAMINER.

PROFESSOR C. W. PURDY said that in testing the urine for evidence of kidney-diseases, the only proteids of any significance were serum albumin and globulin. The presence in the urine of peptone, hemialbumose, etc., points to morbid conditions outside of the kidneys, and whatever light they may shed upon general conditions, they afford us no information whatever as to the state of the kidneys. He mentioned this because so much had been written of late on peptonuria, and the various transition proteids, that an impression seemed to have arisen that the presence of these in the urine was of scarcely less importance than that of serum albumin. The only bearing these non-homogeneous proteids have upon the subject is the fact that their occasional presence in the urine may, with certain tests, be mistaken for serum albumin, unless great care be exercised.

He believed the most delicate of all tests for albumin in the urine to be the potassa mercuric iodide with citric acid: but that it had not met with general favor thus far on account of the errors liable to arise through its use. It is necessary to discriminate between the precipitates formed

by this test with peptone, alkaloids, above all with mucin, and that formed by serum albumin. It is true that heat clears up the precipitates due to peptones and vegetable alkaloids, but not so with mucin, the latter being practically indistinguishable from albumin. He has lately, however, come upon a method which he believes will correct not only the errors due to the presence of mucin, but also those likely to arise from the presence of alkaloids and peptone when precipitated by this test. The method is very simple, viz. : after having applied the reagent to the suspected urine, if a precipitate be formed, add hydrochloric acid in volume equal to the quantity of urine tested ; if mucin, peptone or vegetable alkaloids be the cause of the turbidity, it promptly clears up ; while if due to albumin the precipitate becomes flocculent and settles, but does not dissolve. A considerable number of experiments have shown him that hydrochloric acid in volume equal to one-half the quantity of urine tested quickly clears up the peptone, alkaloid and mucin precipitate, while it requires at least two volumes of hydrochloric acid to dissolve the slighter traces of albumin in urine when precipitated by the mercuric test.

With regard to sugar testing : In addition to the test brought forward by Dr. Billings, two new ones have recently been introduced, both of which are of such exceeding keenness that they are claimed to be able to detect 0.00001 per centum of sugar. These tests are, alcoholic solutions 15 to 20 per centum of alpha-naphthol, and thymol. Two drops of either of these solutions are added to two cubic centimeters of urine, and the mixture briskly shaken ; sulphuric acid is next added in quantity equal to the volume of urine, and again briskly shaken. In the case of alpha-

naphthol a deep violet color is developed in the presence of sugar, and dilution with water throws down a violet blue precipitate, soluble in alcohol with a yellow color, or in caustic potash with a deep yellow. In the case of thymol a dark red color is produced, and, on adding water, a precipitate settles, which dissolves with alcohol, forming a yellow color more decided if ammonia be added.

Professor Purdy often had samples of urine sent him, which though loaded with albumin, no casts could be found therein. These were samples of urine which had been long passed—perhaps several days before, alkaline fermentation having occurred, and the urine rendered alkaline quickly dissolves the casts. In searching for renal casts it is of the greatest importance to have the urine as freshly passed as possible. His method of examining urine for casts is as follows: First, he prefers to have the urine passed at his office. If the urine be neutral or alkaline in reaction, he renders it acid by the addition of dilute acetic acid. In all cases he adds a solution of resorcin to the urine, which prevents change for weeks. The urine thus treated is set aside in a conical glass, carefully covered and allowed to stand for from twenty-four to forty-eight hours; at the end of this time, a few drops—not more than ten—are taken up by a glass tube from the bottom of the glass, and one or two drops placed upon a glass slide and examined under the microscope. He had had no difficulty in finding casts by this method if they were present in the urine even in sparse numbers.

PROFESSOR FRANK S. JOHNSON described a new form of *Hæmoglobinometer*, viz.:

THE HÆMOMETER OF VON FLEISCHL.

It consists of a stand with a horseshoe base, an upright, a

stage, and a well divided perpendicularly in two equal compartments and closed below by thin glass. One-half of the well is to hold blood of known dilution, the other half is for clear water. This well fits an opening in the stage. Beneath the stage, is a plain white reflector. On the under side of the stage is a frame that can be racked back and forth. Set in it is a narrow wedge-shaped piece of ruby glass whose width is one-half that of the opening in the stage. The thicker end of the wedge gives by transmitted light the color of a dilution of blood containing the maximum amount of hæmoglobin. The thinner portions correspond with the color of a dilution of blood poorer in hæmoglobin. The percentage of variation from the normal amount of hæmoglobin is estimated by comparing the color of the blood solution with some part of the ruby wedge. Only artificial light can be successfully used for the examination.

With the instrument are several capillary tubes for measuring the amount of blood to be used for comparison with the colored glass standard. The necessary amount of water for making the dilution is measured in one of the chambers of the well.

The blood for examination is best obtained by pricking the ball of an uncompressed finger and forcing out a drop by gentle pressure. The amount needed is taken in the capillary tube. One of the halves of the well having been previously half or two-thirds filled with water, the blood can be easily washed from the measuring tube into it. Then both halves of the well are accurately filled with water so that the upper surfaces are plane. A small pipette is furnished for this purpose. The well is then so adjusted that the half holding water is above the colored glass, and that holding the blood solution

receives its light directly from the white reflector. The next step is to so adjust the ruby wedge that the light it transmits corresponds in color with that passing through the blood solution. The observer then reads off the percentage of the normal amount of hæmoglobin as indicated by a scale graven upon the metal frame carrying the glass wedge. The average percentage of hæmoglobin in the blood of healthy individuals varies greatly with age and sex. The average is from 12 to 13 per centum. The per-centage of this amount is ascertained by comparison with the color scale. This result should be corrected as far as possible for the known variation of hæmoglobin in healthy blood. Taking as the normal per-centage that found in the blood of healthy individuals between 25 and 30 years of age, it is found that in the first few weeks of life the per-centage is greatly in excess; but after six months or a year, it is below the adopted standard, reaching it again at about 25 or 26 years of age, and that after the thirtieth year, the amount is below the normal but is variable.

The instrument recommends itself to the ordinary practitioner. It does not entirely replace the hæmocytometer, but in all cases where it is only necessary to watch from time to time the rise and fall of the hæmoglobin in the blood, it can be done much quicker and more accurately than by the hasty counting of the corpuscles by the microscope.

DR. J. J. M. ANGEAR thought that it is necessary to count the globules, because we have conditions where the red corpuscles are normal in number but deficient in hæmoglobin, hence the necessity of both instruments.

DR. C. E. WEBSTER, chairman of the Pathological Committee, exhibited a spinal column and said that it showed caries resulting in the entire destruction of the bodies of one of the

vertebræ, without the protection of the characteristic deformity before the removal of the ligaments, no curvature being noticeable.

CHICAGO GYNÆCOLOGICAL SOCIETY.

Regular Meeting, Friday August 20, 1886.—THE VICE-PRESIDENT, HENRY T. BYFORD, M.D., in the chair.

I.—DR. W. W. JAGGARD exhibited

AN OVUM CORRESPONDING TO THE FOURTEENTH WEEK OF PREGNANCY, SHOWING TWIN PREGNANCY, WITH ONE PLACENTA, ONE CHORION, ONE AMNION, BOTH EMBRYOS OF THE MALE SEX.

The interesting specimen was placed at his disposal through the courtesy of Dr. Daniel H. Williams, of Chicago. The egg corresponded to the fourteenth week of pregnancy. It was a case of twin pregnancy, with one placenta, one chorion and one amnion. The embryos were equally well developed and were of the male sex.

The case illustrated one of the modes of origin of multiple pregnancy. An ovum may have two nuclei, and an embryo may be produced from each nucleus. Under these conditions, the fecundated ovum has one placenta (or there is anastomotic communication between two fused placenta), one chorion and two amnions. The amniotic septum may be broken down or absorbed, and the embryos may be contained in a single amniotic sac, as in the specimen exhibited.

In a case of single placenta, or fused placenta with anastomotic communication, and a single chorion, the twins are always of the same sex. (Hyrtl, Spaeth, Braun.)

II.—Discussion of PROFESSOR JOHN BARTLETT's paper, entitled

A PROPOSED MODIFICATION OF PORRO'S OPERATION.

(Professor Bartlett's paper appeared in the September number of this journal.)

PROFESSOR A. REEVES JACKSON said: I have never performed Porro's operation, and am not sufficiently familiar with the literature of the subject to be a proper person to open or even take part in the discussion. I confess I scarcely understand what advantages this operation proposed by the essayist offers over the improved operation by Säger. I would like to know whether Dr. Bartlett has performed this operation either upon the living subject or the cadaver. It seems to me there are practical difficulties in the way. In a review by Harris, of Philadelphia, in the *American Journal of the Medical Sciences*, of the work of Mangiagalli "On the More Recent Modifications of the Cæsarean Section," it is stated that it had been proposed to invert the uterus; for the purpose, however, of lessening the danger from septic infection, and not to facilitate the amputation, as is designed by the suggestion of Dr. Bartlett.

DR. E. J. DOERING asked how often the Cæsarean operation had been performed in Chicago.

PROFESSOR W. W. JAGGARD thought Dr. Bartlett's paper a very ingenious essay, although not based upon sound surgical principles. In the first place, he thought the title of the essay a misnomer. The operative procedure proposed by Dr. Bartlett was not in any sense of the term a modification of or a substitute for Porro's operation. It was a perfectly distinct operation. Dr. Bartlett's method offered no advantages over Porro's operation, as modified by Müller and others. The abdominal cavity is not more thoroughly closed. The presence of a large pedicle does not embarrass the closure of the

abdominal incision. The relation of the parts in the suggested procedure are not more natural and much less strained than in the *status* in which Porro's method leaves them. Drainage is entirely unnecessary when Porro's operation has been skillfully performed.

On the other hand, the positive disadvantages are numerous: The dangers of shock and hæmorrhage in artificial inversion of the uterus has been very much underestimated by Dr. Bartlett. The cases, collected from the literature of the subject, when they were at all relevant, were questionable as to authenticity. Accidents occurring to the uterus among the lower animals could not be adduced in evidence as to what would be the probable effect upon human beings under similar conditions. The thermo-cautery was inadequate to the arrest of hæmorrhage from a large incision through the walls of the pregnant uterus.

The uterus could only be inverted with ease, when it was pathologically flaccid,—an exceptional condition. Porro's operation was performed in cases of the simple, flat rachitic pelvis, when the antero-posterior diameter of the brim was 6 cm. or under. Above 6 cm. craniotomy or the forceps is indicated. It would be very difficult to invert the uterus through the conjugate, oblique or transverse diameter under such conditions. In the pelvis of Robert, or in the osteomalacic pelvis, in which the degree of contraction is usually higher, artificial inversion of the uterus would be well nigh impossible.

Then amputation of the inverted uterus is a dangerous operation *per se*. Of the 48 cases collected by Dr. West,* 12 terminated fatally. Of 58 cases of amputation of the inverted uterus, reported from a German source,† 18 terminated

* Diseases of Women, p. 240.

† American Journal of Obstetrics, Aug., 1868.

fatally. "In 106 cases of amputation by ligature* and otherwise, over 31 per cent of deaths occurred." But it is not necessary to multiply statistics. So great is the mortality of this operation, that A. Martin† has proposed as a substitute the total extirpation of the uterus.

If, then, upon *à priori* grounds Dr. Bartlett's suggestion has no real advantages over the modified Porro operation, and, on the other hand, possesses actual disadvantages, it is scarcely probable that the expedient will receive serious consideration.

DR. J. SUYDAM KNOX said: Dr. Jaggard has about covered the objections I intended to make. My impression is that Dr. Bartlett in his paper has over-estimated the relaxation of the uterus immediately after delivery, and the ease with which inversion can be accomplished. Atony of the uterus is the first cause of inversion; and when we consider how minute is the per-centage of inversions in the vast number of labors, we can fairly assume that relaxation immediately after delivery seldom occurs. If this be so, inversion, even with the *vis a tergo*, would be extremely difficult. Again atony of the uterus is the cause of the most dangerous symptom or complication of inversion, namely, hæmorrhage; therefore the cases most favorable for the operation of Dr. Bartlett would be the last ones in which so doubtful an experiment would be tried. The Doctor has made a valuable suggestion. Any method that successfully removes the uterine stump from the abdominal cavity, without attaching it to the abdominal incision, advances the operation of hysterectomy. In the ablation of the non-pregnant uterus, I think Dr. Bartlett's method finds its best opportunity.

* Emmet: Principles and Practice of Gynecology, 1884, p. 436.

† Pathologie und Therapie der Frauenkrankheiten, 1885, p. 144.

PROFESSOR JAMES H. ETHERIDGE asked if the performance of inversion by forcible traction involved the full dilatation of the neck of the uterus. How does Dr. Bartlett propose to accomplish this, does he dilate it forcibly? With the uterus well up beyond the umbilicus, how do the broad ligaments come out of the pelvis, and with the uterus forced clear down out of the vulva, how much traction is there going to be on these broad ligaments? Is there room enough to permit the uterus to be drawn down?

Why, under the circumstances, could not forceps be immediately applied to the edge of the cut uterus, and arrest the hæmorrhage, and the work be then proceeded with at pleasure? I speak of hæmostatic forceps.

DR. E. W. SAWYER said: It seems a little presumptuous for one who has never had experience in this department to attempt to enlighten the Society. One of the most interesting questions to be decided is which operation to perform. I confess if I were confronted to-night with one of these cases I would be wholly incompetent to decide between the Cæsarean operation and the operation of Porro. It may be interesting to read the words of Lawson Tait upon this very point, showing his preference for the new operation, so-called. In the fifth number of the *British Gynecological Journal*, he says: "The whole of my experience in meddling with the pregnant uterus by abdominal section, consists of five cases, three of the ordinary Cæsarean section and the two I am about to describe in detail. Of the Cæsarean sections one was performed for malignant disease of the vagina about fourteen years ago, the other two for deformed pelvis, respectively seven and five years ago, and the mothers died, and only one of the children is now living. The results

indeed are such as to determine me never to repeat this procedure, having before me the arguments of Dr. Godson and the fact that both my amputation cases have recovered." At the same meeting Dr. Routh said: "That he was much interested and instructed by Dr. Lawson Tait's paper. At the same time he could not help making some criticisms upon it. First, he believed that Mr. Tait had exaggerated the mortality of the Cæsarean section. It was not anything like 99.971 per cent. Churchill stated that out of eighty cases twenty-three mothers were saved, or 28.7 per cent., forty-four children being saved. Dr. Radford, out of seventy-six cases he collected, found 14.28 were saved, and forty-six children were also saved. Dr. West, out of 409 cases, states the recoveries as 38.4 per cent., 237 children being saved. Now he (Dr. Routh) could not help feeling that if in these days of improved antiseptic abdominal surgery, the same skill and care were taken in cases of Cæsarean section, the safety of the mother would be much more common." It is interesting to see how gentlemen will differ in their opinions upon such an important thing as the selection of an operation in an emergency case. So I am still in doubt whether to adopt the modern method of Porro or to depend upon the Cæsarean section, which the remarks of Dr. Routh would indicate is quite as favorable.

At the request of Dr. Etheridge, Dr. Sawyer narrated the following case, showing the shock and hæmorrhage of acute inversion. I will state very briefly an experience which, no matter how long I may live, seems as if it would never become dim. I have never had any doubt that the determining cause of the acute inversion in this case was the enormous distension of the uterus due to the large quantity of *liquor*

amni. Before the woman was delivered, I was impressed with the fact that she probably had twins, but this was not the case. When the woman was delivered the bed was flooded, the *liquor amni* flooding the room even. I put my hand upon the woman's belly, as is my custom, and at the first indication of contraction of the uterus, I substituted the husband's hand for mine that I might pay attention to the child. I am confident that the husband's fingers dimpled that uterus. I had no sooner detached the child than I gave the usual teaspoonful of ergot. I was in a hurry, on account of the flabby condition of the uterus, and for fifteen minutes my time was occupied in paying attention to the child, getting it to breathe. The woman, who had recovered from a small quantity of ether which I gave her, threw up her hands and I saw she was pale. I put my hand under her husband's and felt the edge of the uterus like the edge of a saucer, I could define the margin of the crater, my finger in the vagina met the globe inverted and the truth flashed across me that I had an inverted uterus. Now fifteen minutes had not elapsed before that uterus was so firmly ergotized that it was impossible to replace it. I immediately resumed ether and the woman began to snore, but that made no difference, the womb was ergotized and the woman died from shock and hæmorrhage with the uterus unreduced.

Dr. Jaggard has called attention to the enormous hæmorrhage, and this reminds me of a case in which I removed a foetus from the abdomen of a woman in the little town of Boulder. The foetus had been in the uterus for three and a half years. It was an adventitious uterus, the exact structure of which could not be ascertained, but the hæmorrhage from the false uterus was enormous, and, I think, destroyed the woman. If the false uterus and adventitious sac could bleed

to that degree and so early in pregnancy, the dangers of hæmorrhage must surely be greater in the uterus at term containing a living foetus and an active placenta.

This operation was done in 1874. The hæmorrhage was cavernous. We arrested the hæmorrhage by seizing the edges and puckering them up and tying an enormous ligature around the stump. For a moment that arrested it, but the woman subsequently died.

DR. H. T. BYFORD said: Like any other operation, this one, supposing it to be an operation that has been performed, has its limitations. I think Dr. Jaggard's suggestion that a greatly contracted pelvis might afford sufficient difficulty to make the operation impracticable, is a good one, although I think that the uterus might be inverted through a pelvis too small or too much distorted for a safe craniotomy. Another limitation would be an undilated condition of the cervix. The irritation produced by rapid dilatation would certainly render the cervix unfit to be left as a stump, and make the Cæsarean or Porro operation preferable. If the os is already dilated, then Thomas' revised laparo-elytrorrhaphy must be given precedence, provided there be no counter-indications. The difficulty of inverting the uterus is not an imaginary one, and it seems to me that the best way to overcome it would be to invert the uterus, placenta and all, before the placenta is separated, and between pains. This would tend to still further limit the operation to cases without extreme contraction and would bring it into rivalry with craniotomy. Its chief advantage over the Porro operation lies in not fixing the cervix several inches beyond its normal position; and here lies the germ which the author seems to be trying to develop. Should there be a condition of the uterus which would not favor the Cæsarean operation as performed by Säger and

Leopold, should the size of the cervix or vagina render fixation of the stump in the abdominal wound too difficult, were the uterine walls not sufficiently relaxed to be inverted, or the pelvis not roomy enough to allow inversion with the placenta attached, should the condition of the tissues about the vagina and bladder contra-indicate laparo-elytrorrhaphy, and should the os dilate naturally and easily, then this operation would find its rare opportunity. The process of paring out, and inverting the cervix, as has been suggested, is easier to talk of than to perform. Any one who has seen the uterus amputated, even in cases of fibroid tumors, will agree that the loss of blood, including that taken off with the amputated pregnant uterus, and the vascularity of the stump would make the process of inverting the sliced cervix very hazardous. The stump, thus turned down, would undoubtedly shrink rapidly, and become a hard one to manage. As to opening the uterus with the cautery, I think this would not possess much advantage unless complete constriction of the uterus and broad ligaments could be made, so that bleeding would not interfere with the complete searing of the parts.

PROFESSOR BARTLETT, in closing, said: Some of the fellows taking part in the discussion, as they have stated, have not had an opportunity of hearing more of the paper than the bare proposition. Not needlessly to occupy time, I shall pass over such objections (all of which I recognize as forcible) as have been fully considered in the paper, now printed.

Dr. Jaggard refers to the authorities quoted by me as "questionable." So far as my knowledge extends, not a case cited rests upon other than unquestionable authority. The Doctor thinks the actual cautery would prove useless as a means of arresting hæmorrhage from the uterine incision.

Prior to the time of Ambrose Paré, the cautery was relied upon "to arrest all forms of hæmorrhage."

Dr. H. T. Byford has dwelt upon the difficulty of dilating the *os uteri* by artificial means, and in my opinion he has not exaggerated the difficulties often encountered in practice, where the parts are not prepared for dilation.

In regard to the embarrassment felt by the Secretary as to which operation to prefer, whether the old or the Porro method, I might say that, in face of the several substitutes and modifications, he would be amply justified in preferring the old Cæsarean section.

W. W. JAGGARD, M.D., *Editor*.

2330 Indiana Avenue, October 1886.

CHICAGO GYNÆCOLOGICAL SOCIETY.

Regular Meeting, September 17, 1886.—THE PRESIDENT, DANIEL T. NELSON, M.D., in the chair.

I.—ETHERIDGE. Report of a case of Supra-Vaginal Amputation of the Pregnant Uterus, Complicating a Multilocular Fibroid Tumor.

II.—PARKES. Successful Removal of the Uterus for Fibroids.

PROFESSOR JAMES H. ETHERIDGE read a paper entitled

I.—REPORT OF A CASE OF SUPRA-VAGINAL AMPUTATION OF THE PREGNANT UTERUS, COMPLICATING A MULTILOCULAR FIBROID TUMOR.

Mrs. A. B., aged 34 years, married several years, no children, first experienced uterine symptoms some four years ago, which Dr. Knox, her medical attendant, recognized as due to a uterine retroversion, and treated with a pessary for

six months. On March 10, 1884, he was again called to her, and found the uterus again retroverted. "This time, however," he writes, "it was apparently fixed in the pelvis; the *os tincae* was caught firmly behind the pubes, and in Douglas's *cul-de-sac* was a firm sensitive mass that seemed to be more than the *fundus uteri*. There was also considerable abdominal tenderness, fever, and nausea. It was difficult to diagnosticate between cellulitis and simple retroversion with impaction. Careful manipulation, however, in Sims's position, corrected the displacement with complete relief of the distressing symptoms. Hot fomentations and vaginal douches aborted the threatening cellulitis. Two days thereafter, on careful examination, I detected a sub-peritoneal myoma on the left posterior aspect of the fundus. It was about half the size of an unimpregnated uterus. This accounted for the tight impaction of the retroverted organ.

"A pessary was again introduced, and twenty minim doses fluid extract of ergot, three times a day, ordered. The drug was faithfully taken for about twelve months. During that time a second fibroid appeared upon the right lower and anterior surface of the womb. These tumors steadily enlarged until the uterus was lifted entirely out of the pelvis. Excepting the results of mechanical pressure, the patient's health was excellent, and menstruation was undisturbed.

"April, 1885, the ergot was discontinued. Owing to the sub-peritoneal character of the fibromata, their growth was uninfluenced by the drug."

The growth of the tumor in the last two years has been slow but progressive. In the last six months it caused no special symptoms beyond vague supra-pubic pains at times.

In May, 1886, thirteen months after the stopping of the use of ergot, Dr. Knox was again summoned to attend her for a distressing nausea. At the same time the menses, which had never been excessive, ceased. Mammary changes supervened.

In the ensuing three months the tumor grew rapidly. To Dr. Knox must be ascribed diagnostic skill of the highest order in determining the presence of pregnancy in such a mystifying condition of things. He decided that she must be pregnant, and awaited the expiration of the first three months to produce an abortion, hoping thereby to induce involution to such an extent as, at least, to arrest the rapid increase in the growth of the tumor. Accordingly, on August 1, 1886, when the three months had expired, he introduced a sound into the uterus four inches. Its withdrawal was followed by a small amount of blood, the nausea and vomiting ceased, and the mammary symptoms disappeared. Nothing further ever followed indicating the previous existence of pregnancy or an abortion, and the conclusion was reached that conception had not occurred.

The rapid encroachment on the abdominal organs was progressively killing her. Her strength had greatly diminished. For six months she gradually emaciated. Her sufferings from the pressure of the tumor were great, and eventually led to her giving up and remaining in bed nearly all the time, because she thus experienced the most comfort. In addition she was easily put out of breath by exertion.

Forty hours before the operation she had a free purge, and twenty hours later she went to the Presbyterian Hospital to remain overnight, to receive a bichloride of mercury bath and to have her pubes shaved.

At the time of the operation she presented the following measurements:

1. Girth at the umbilicus, 31 inches.
2. From ensiform cartilage to umbilicus, 7 inches.
3. From umbilicus to symphysis pubis, 6.5 inches.
4. From either ant. sup. spin. proc. to umbilicus, 7 inches.

From external examination it was found that the tumor extended from the right iliac fossa across the abdominal cavity in a straight line to the spleen. Its length was, apparently, double or treble its width. It was freely movable, free from adhesions, and solid. It presented great tenderness in the right iliac fossa.

Per vaginam the *cervix uteri* was found very high up in the left iliac fossa and the *fundus uteri* was apparently thrust into the right iliac region. The whole tumor moved with the uterus. A very small resiliency offered to conjoined manipulation led me to think that I had to do with a *fibrocystic tumor of the uterus*. The sound entered the uterus four inches and seemed to pass towards the umbilicus.

Just before commencing the operation a sound introduced into the bladder showed that this viscus was not enlarged by being drawn up out of the pelvis by the growth of the tumor.

At the same time the sound was introduced into the uterine cavity and entered only four inches. It had to be bent at an obtuse angle to make it engage in the cervical canal. Its introduction was attended with a small hæmorrhage, which subsequently was the innocent cause of severe but brief alarm.

The instruments used in the operation were dipped in a five per centum solution of carbolic acid, and subsequently

kept in a two per centum solution of the same agent when not in actual use. No spray was used. The sponges were antiseptised with carbolic acid. The details of the operation were simplicity itself. The incision began one inch above the umbilicus and extended down to within an inch and a half above the pubes. It was carried to the left of the umbilicus and measured six inches. Upon exposing the tumor it was found wholly free from adhesions. It extended to, and pressed upwards, the spleen. It was oblong, its length being about treble its width. It was situated obliquely across the whole abdominal cavity. Its upper end was easily turned out of the abdomen, and the whole mass was lifted out of its bed. Its smooth, red surface nowhere indicated the outline of the uterus. Its lower end seemed to be one solid mass of pedicle extending completely across the whole inlet of the pelvis from side to side. The laminæ of the right broad ligament were separated in the most conspicuous manner that I ever beheld. The two ovaries were attached to the mass on a level with the umbilicus, having been lifted completely up into the abdominal cavity.

After button-holing the capsule of the tumor as low down as was practicable, it was peeled off as far as the finger could reach right and left, and ligatured in small masses in two places an inch or more apart and then divided between the ligatures. In this way all of the capsule that could be secured in ligatures and cut was soon treated, and the hæmorrhage from the operation was barely worth mentioning. The right uterine artery, which was much enlarged, was torn across and quickly secured. All of the spermatic and uterine arteries were secured with double ligatures of No. 14 silk. Thus the apparently large pedicle was much

reduced in size and was found to be about equal to the normal *corpus uteri*.

Around this mass was placed a Kæberlé's *serre-nœud*, which was properly tightened, and the tumor excised. Small vessels were then secured. The clamp was then slowly loosened and the vessels of the stump were tied.

The cervical canal was conspicuously visible in the center of the stump. It was drawn up by a vulsellum as tautly as possible and excised for the length of at least one inch. The piece removed was cone-shaped, with its base upwards. Six stitches were then used, from side to side, placed so that when tightened the peritoneum was accurately brought together over the top of the stump. They were tied as tightly as they could be drawn. All further bleeding was attended to *secundam artem*, and the abdomen closed with nineteen stitches. The initial incision was made at 10:30 A.M., the stitches were begun at 11:42 A.M., and the operation was completed at 12:01 P.M.

She rallied from the operation in a few hours. For a period of four days afterwards she had a most intractable vomiting. After feeding by the rectum and permitting absolutely nothing to pass her lips, this troublesome symptom slowly diminished and gradually disappeared, but not until she had acquired a slightly pinched condition of the *alæ nasi*, which brandy caused to disappear. On the third day an offensive odor proceeded from the vagina. A carbolyzed solution permanently corrected it. It must have arisen from decomposition of the small amount of blood provoked by the introduction of the uterine sound.

Thereafter naught especially eventful occurred to direct attention to, excepting the following points :

1st. The patient never had an alvine dejection after the operation. Flatus passed only after the colonic distension permitted it, through a rectal tube. Repeated efforts were made to secure defecation, without result.

2d. At no time after the operation did she have a chill or sweats. The days were very hot and her greatest comfort was in being gently fanned and in dabbling her hands in a bowl of water placed at her side.

The following record of pulse, temperature and respiration was kept till the death of the patient, which occurred eleven days and nineteen hours post operation.

August 8.—5 P.M., P. 128, T. 101°, R. 18; 8 P.M., P. 120, T. 100.8°, R. 16; 10.45 P.M., P. 120, T. 100.2°, R. 20.

August 9.—8.45 A.M., P. 110°, T. 99.6, R. 20; 12.30 P.M., P. 116, T. 100°, R. 16; 8 P.M., P. 116, T. 100.3°, R. 24.

August 10.—10 A.M., P. 118, T. 100; 4 P.M., P. 112, T. 99.3°, R. 26; 8 P.M., P. 110, T. 99.5°, R. 22.

August 11.—8 A.M., P. 124, T. 100.5°, R. 22; 2 P.M., P. 110, T. 99.7, R. 18; 8.30 P.M., P. 128, T. 100.7°.

August 12.—8 A.M., P. 114, T. 99.5°, R. 18; 2 P.M., P. 112, T. 98.7°, R. 17; 8 P.M., P. 114, T. 99.5°, R. 14.

August 13.—7 A.M., P. 114, T. 99.8°, R. 14; 4 P.M., P. 108, T. 99.6°, R. 14; 8 P.M., P. 114, T. 100.3°, R. 14.

August 14.—7 A.M., P. 112, T. 100.9°, R. 14; 2 P.M., P. 112, T. 99.8°, R. 16; 8 P.M., P. 116, T. 99.5°, R. 18.

August 15.—8 A.M., P. 120, T. 99°, R. 16; 4 P.M., P. 116, T. 99.5°, R. 16; 8 P.M., P. 114, T. 99.4°, R. 16.

August 16.—8 A.M., P. 112, T. 100°, R. 14; 4 P.M., P. 108, T. 100.6°, R. 14; 10 P.M., P. 112, T. 100°, R. 16.

August 17.—8 A.M., P. 110, T. 99.4°, R. 16; 4 P.M.; P. 120, T. 99.6°, R. 16; 8 P.M., P. 120, T. 99.8°, R. 16.

August 18.—6 A.M., P. 118, T. 101.5°; 12.30 P.M., P. 114, T. 101.6°, R. 14; 8 P.M., P. 124, T. 102.8°, R. 18; 10 P.M., T. 102°; 11:50 P.M., T. 103.2°.

August 19.—1 A.M., T. 102°. Death at 6:45 A.M.

The autopsy was made thirty-two hours after death, and revealed a pelvis filled with fluid consisting of blood and pus. The small intestines were agglutinated over the pelvic inlet, almost hermetically. The surfaces of the small intestines turned towards the cavity of the pelvis presented a condition of sphacelus approaching demarcation. The pelvic cellular tissue was completely honeycombed with pus cavities. The stump presented a shrunken appearance, as though all of the stitches had been loosened, yet no pelvic fluid had found its way into the vagina through the cervical canal. The patient had succumbed to septicæmia. I regret that I did not drain.

Examination of the tumor revealed the fact that it was a multilocular fibroma, and that it grew from the anterior wall of the *corpus uteri*. The cavity of the uterus was found on a level with the umbilicus and contained a three months fœtus in unruptured membranes, evidently alive up to the time of operation. The cervical canal was $5\frac{1}{2}$ inches long, which fact explains the immunity of the membranes from puncture by the introduction of a sound only four inches. The canal resembled the letter U, with its legs pulled apart, starting from the extreme left iliac fossa at the *os uteri* it passed towards the umbilicus two inches, and was then deflected at an obtuse angle towards the spleen.

Upon laying open the uterine cavity it was found to be in appearance a cavernous hollowing out of the posterior sur-

face of the tumor. In front of it was nearly the whole width of the tumor. Its posterior boundary was a wall of uterine tissue thinner than the normal, unimpregnated posterior uterine wall. It was situated in the middle of the tumor.

The membranes presented a leaden, grayish appearance, and were filled with fluid, its smooth, undulating surface, in contrast with its nodular surroundings, looking not unlike the surface of "The Devil's Punch Bowl" on the top of Mt. Mangerton.

The fœtus was a male. Its cord was seven inches long and was normally attached.

Microscopic examination of the tumor by Dr. Ochsner shows its character to be purely *fibromatous*. Its weight was about ten pounds.

Remarks.—The removal of fibroid tumors which are slowly but surely killing patients has now passed into the category of recognized and justifiable operations. The astonishing successes of Keith in removing them are sufficient guaranty of justification for removing such growths under proper conditions.

But the complication of large fibrous tumors of the uterus with pregnancy presents the gravest possible condition for the surgeon's consideration. Conception seemed to give an impulse to the rapidity of the growth of the tumor under consideration that was very surprising. The arrest of its growth or its removal were the two horns of the dilemma. Against the production of abortion there are serious objections. It is followed by disproportionately great dangers and cannot possibly lessen the size of the growth materially.

The possibility of uncontrollable hæmorrhage from the seat of the placenta on a non-contractile mass of tumor must be faced in producing an abortion. In addition the dangers of septicæmia from puerperal disintegration of the tumor are not to be forgotten. While running the two risks of hæmorrhage and septicæmia from producing an abortion there is the very great possibility of avoiding a future extirpation of the whole mass by inducing a cessation of growth of the tumor, or even possibly by inducing a greater or lesser involution of the growth. The examination of the tumor shows conclusively that the uterus could never have extruded the fœtus and its adnexa through the elongated cervical canal because of the inutility of the uterine muscular fibre through fibromatous degeneration. Consequently abortion would in all probability have proven fatal through septicæmia. I am thoroughly convinced that the patient could not have lived many weeks longer without the death of the fœtus, when the overwhelming disaster of fatal sepsis would have speedily ensued without any compensatory explanation short of an autopsy, since the idea of pregnancy was about abandoned because abortion failed to occur; and the non-appearance of the fœtus *per vias naturales* would afford no satisfactory evidence of what had occurred, but, quite to the contrary, would have rendered a mysterious case much more mysterious. In such an event, *sine autopsia*, the pathological reasoning would have been that spontaneous necrosis of the fibroma had occurred and septicæmia followed.

References.—Hegar and Kaltenbach report six cases in the third edition of their "*Operative Gynecology*," 1886, as follows :

Author.	Date.	Time of pregnancy.	Character of Tumor.	Result.
Kaltenbach	March 2, 1880	Fifth month	Myoma	Recovery
Wasseige	March 18, 1880	Fifth month	Myoma	Death 6th day
Nieberding	May 10, 1882	Fourth month	—	Death 40 hours P. O.
Schroeder	June 10, 1884	Third month	Myoma	Recovery
Schroeder	June 21, 1884	Third month	—	Recovery
Walter	— 1883	Fourth month	Colloid	Death 9th day

CASE 7.—Dr. H. R. Storer amputated the pregnant uterus, in a primipara, æt 37 years, after three days of labor had passed, for a fibro-cystic tumor. The pedicle was constricted by a double metallic ligature and kept outside. The patient died in seventy hours of septicæmia. (*Journal of Gynecological Society of Boston*, October, 1869, p. 223.)

CASE 8.—Prof. S. Tarnier, Neuilly, France, on February 24, 1879, removed the uterus from a primipara, æt. 33 years, for a fibrous tumor of the uterus, after the patient had been in labor seven days. Condition of the patient at the time of operation very unfavorable. The fœtus was putrid, gas in the uterus having been found. Pedicle was kept out with a metallic pin and metallic ligature. Patient died of septicæmia on third day. (*Annales de Gynécologie*, August, 1879, p. 81.)

CASE 9.—Dr. Zweifel, of Erlangen, Germany, on July 31, 1880, removed, from a primipara, æt. 37 years, the uterus, several hours after labor began, because of a fibroid tumor in the cervix. Patient died on the sixth day of septicæmia. The pedicle was tied with double silk ligature. (*Archiv. für Gynäkologie*, B. 17, H. 3.)

CASE 10.—Prof. Cataliatti, of Palermo, Italy, on October 28, 1880, removed the pregnant uterus from a primipara, æt. 41 years, for an interstitial fibroid of the posterior uterine wall soon after the inception of labor. The pedicle was kept outside with wire ligature and transfixed with metallic

pin. Recovery followed. (*Bulletin dell. Accademia di Medicina di Palermo*, 1880.)

CASE 11.—Dr. L. Prochownick, of Hamburg, Germany, performed hysterectomy, April 21, 1881, on a primipara, æt. 40 years, at seventh month, about twenty-four hours after the discharge of the liquor amnii, for a fibromyoma of the uterus impacted in the pelvis. The pedicle was held out of the abdomen with Péan's constrictor, two long pins, and stitched to the lower angle of the wound. The patient died in sixty hours p. o. from septicæmia. (*Deutsche Medicinische Wochenschrift*, No. 40, 1882.)

CASE 12.—Dr. Fochier, Lyons, France, on November 23, 1882, amputated the uterus at term, after the patient had been in labour three days, for a fibroid in the uterine cervix. Recovery followed. It was her fourteenth pregnancy. The pedicle was kept out in the lower angle of the wound. (*Lyon Méd.*, May 20, 1883.)

CASE 13.—Dr. M. Hanfield Jones reported in *Transactions of the Obstetrical Society of London*, vol. xvii, 1886, the case of a woman at term in whom delivery was impossible because of a subperitoneal fibroid in the true pelvis. The entire uterus and its appendages with the tumor was removed and the cervix clamped. The patient died of peritonitis on the third day.

CASE 14.—Amputation of the pregnant uterus at term, by Dr. M. Hofmeier, for fibroid tumor in the pelvic cavity. Reported by Dr. P. F. Mundé in the *American Journal of Obstetrics*, September, 1886, vol. xix, p. 905. Mother and child both saved.

CASE 15.—Large pediculated subperitoneal fibroid. Pregnancy, two months. Removal of tumor, uterus and ovaries.

Result not stated. Operator, Meredith. Reported in the *American Journal of Obstetrics*, September, 1886, p. 923.

PROFESSOR CHARLES T. PARKES read a paper entitled
II.—SUCCESSFUL REMOVAL OF THE UTERUS FOR FIBROIDS.

Mrs. L., an American lady, 37 years old, was first examined by me March 11, 1886. She had been married about nine years, but had never been pregnant. The consultation was held for the purpose of getting relief from an abdominal tumor, which first began to show evidence of its existence some three years ago. The first symptoms noticed was a burning pain in the right side, which continued with greater or less severity for about six months, when a small painless tumor was recognized deep in the right groin. This growth continued to enlarge steadily until she saw me, without any exacerbation of rapidity, until during the last six months, when it has grown more rapidly and its volume has increased to a greater extent than during the entire previous period of its history. Lately also the patient has lost rapidly in strength and flesh. There has been no interference with menstruation, that function being performed normally the entire time.

The tumor has seemed to diminish in size during menstruation, at least the feeling of fullness was lessened at those periods. The mammæ have not shown evidence of change of any nature. The right leg has swollen slightly for short periods of time and been the site of considerable neuralgic pain. On inspection the abdomen was evenly distended by a symmetrical tumor, occupying a central position and reaching close to the *appendix ensiformis*; the respiratory acts make no impression upon it. Palpation determined the presence of considerable free fluid in the peri-

toneal cavity and an indistinct, uncertain kind of fluctuation in the tumor itself. There was well-marked resonance surmounting the upper half of the tumor. The mass itself was quite tender to the touch. Vaginal examination revealed the os high in the pelvis, centrally located, with a small mass behind it, seemingly continuous with it, which was supposed to be the retroverted uterus. The free abdominal fluid rendered this examination unsatisfactory. No sound was passed. No positive diagnosis was made, but the supposition favored an ovarian growth. The patient desired an early operation.

She was advised to remain quietly in bed and to take such medicines as would probably lead to removal of the ascites. These instructions were carried out, and the second and final examination was made April 11, 1886. The patient was very much reduced in flesh and very anæmic, all the mucous surfaces exceedingly bloodless. Examination showed the peritoneal fluid entirely removed—the tumor standing out freely and prominently for inspection on all sides. It still seemed to give rise to fluctuation; palpated by several medical gentlemen, the testimony of all was that it contained fluid. To pressure the sensation was that of elasticity. Vaginal examination now showed plainly that the uterus was incorporated with the tumor; the sound went directly into it for five inches. On the posterior surface two small tumors were now plainly felt; the largest of them was supposed to be the retroverted uterus at the first examination. The diagnosis now was a uterine tumor.

The operation for removal was done at the Presbyterian Hospital, April 13, 1886, in the presence of Drs. Gunn,

Etheridge, Graham, Adolphus, Mitchell, Ochsner and others. An incision was made in the *linea alba* from the umbilicus to the pubes and the tumor exposed. It showed a white, glistening surface, very much like a cyst, and seemed to contain fluid. The introduction of the trocar was not followed by any flow of fluid, and during the manipulations the tumor changed to a darkish-red color. This change of color upon manipulation I have seen occur on other occasions, and its occurrence is a very sure indication of a uterine tumor. The incision was prolonged several inches above the umbilicus and the mass turned out of the cavity. After ligating and compressing the broad ligaments with forceps they were divided and the uterus cut through three-fourths of an inch above the cervico-vaginal junction. Paquelin's cautery was used to disinfect and destroy the cervical canal and to sear the uterine stump. It was also applied freely to the edges of the divided broad ligament on both sides. This controlled perfectly all hæmorrhage, except from two spurting arteries on the opposite lateral edges of the uterine stump; these were isolated and tied separately. All ligatures were of carbolized silk. A large rubber drainage-tube was carried to the bottom of Douglas's *cul-de-sac* and the extensive abdominal wound closed by eighteen sutures.

The patient was put to bed considerably collapsed, but rallied well, and as the record shows until she left for her home, May 30, never had a temperature of 100° F. There still remains a small sinus at the site of the drainage-tube, discharging about 1 dram of sero-pus in twenty-four hours. One of the silk ligatures has been discharged through it. The lady has gained flesh and strength rapidly, and is free

from a trouble which was rapidly robbing her of all comfort in life and hastening her death.

The drainage-tube did excellent service in this case, allowing the exit of large quantities of bloody serum for many days after operation. In my practice its use has always served a good purpose when large raw surfaces were left in the abdominal cavity from whatever cause.

In spite of the absence of rise of temperature I have never managed an abdominal section in which the external wound did so badly. The main portions of the skin united by first intention, but a large abscess formed in the sheath of the rectus muscle, the pus from which extended from one end to the other of the wound; the nozzle of the irrigator introduced at one extremity of the wound and the carbolized water turned on, caused the pus to flow out freely from the opening at the lower end; the peritoneal edges united firmly at once and so saved trouble from this source.

It was slow in healing, several weeks, but finally united very soundly. The patient's very feeble vitality may account for the bad course taken by the wound. The wound was dressed, as I have been in the habit of doing for years, absolutely dry, with absorbent cotton and iodoform. My experience with these cases rather confirms a supposition that the frailest and weakest patients are the ones most likely to recover.

At the time of removal the tumor weighed fourteen pounds. Even after removal many gentlemen present were convinced from its consistence that it contained a cavity holding fluid, so very deceptive was its elasticity.

DISCUSSION.

PROFESSOR J. S. KNOX said : I want to call attention, in the case reported by Dr. Etheridge, to the rapid development of myomata after the establishment of pregnancy. I have two other cases of uterine fibroid that came under my care about the same time as the patient reported by Dr. Etheridge and who were treated similarly, and in whom also menstruation was not disturbed. They are still in perfect health, and the probabilities are that when they die it will be of some other disease ; one being a widow, the other an unmarried woman. The growth of this myoma before us was slow but persistent, in spite of the use of ergot, and until the time the menses ceased and pregnancy commenced, the woman enjoyed perfect health, all unfavorable symptoms appearing within three months preceding operation. Another fact I would like to call attention to is the danger of abortion in such cases. With the consent of Dr. Etheridge, I delayed any operative procedures until the woman had reached the full three months of pregnancy, that I might produce an abortion ; I introduced the sound with great difficulty, and passed it up full four inches ; it produced considerable hæmorrhage, which continued for about three days. The nausea ceased immediately and the patient noticed a diminution of the size of the breasts and lost the sense of fullness of the abdomen. Her appetite returned and she took a great deal of nourishment, which improved her physical condition very much: a strange result, seeing the abortion was not accomplished. In opening the tumor after its removal, I was satisfied that if I had produced the abortion the woman would probably have died of sepsis or hæmorrhage. There was no possible outlet for the contents of the

uterus, and I think it was a fortunate thing that we did not succeed in accomplishing the abortion. Under similar circumstances I would prefer hysterectomy with its risks to abortion with its risks.

PROFESSOR E. C. DUDLEY said: Notwithstanding the general principle established by ovariectomy that the extra-peritoneal method is in itself dangerous, and that it should consequently be avoided whenever perfect intra-peritoneal hemostasis can be secured, and notwithstanding the fact that this general principle should stand for all operations involving the removal of abdominal tumors, yet the best statistics of the intra-peritoneal method in hysterectomy show a mortality of 30 or 40 per cent, while Keith and Bantock, with the clamp or *serre-nœud*, have a mortality of only 10 or 15 per cent. Now if it be true that certain dangers are inseparable from the extra-peritoneal method, it follows that part of this 10 or 15 per centum of mortality must be in consequence of it, and that the statistics might still further be improved if by some means an intra-peritoneal ligature could be applied which would give the same security against hæmorrhage and permit operators to dispense with the clamp. But the dangers of the silk ligature are greater than those of the clamp, because, however thoroughly applied, and however carefully the stump be stitched together, shrinkage of the stump from the escape of serum almost always occurs within a few hours, with consequent loosening of the ligatures and hæmorrhage, which may be fatal at once from great loss of blood, or later from septicæmia. The indication clearly is for an elastic ligature capable of following up the shrinking stump and of securing thereby permanent hemostasis. India rubber fulfills this indication, and if properly applied is capable of becoming readily

and safely encysted. The experiments of Löwenhardt and Hallswachs, together with the numerous operations of Ols-hausen and others, give good evidence that the India-rubber tube when dropped into the abdomen is free from danger. It is true that certain cases have been reported in which sloughing of the pedicle has followed the application of the elastic ligature with resulting abscess, but this occurs in consequence of using a ligature of any material so large that it cannot imbed itself in the stump, and thereby permit the surface to close over it so as to secure the prompt establishment of collateral circulation to the distal portion of the stump.

Not very long ago the question was raised whether in supra-vaginal amputation it is necessary to remove the ovaries at the same time—a question to which experience has given an affirmative answer. Péan has observed a case of catamenial hæmatocele, Hegar a case of extra-uterine pregnancy and Kaltenbach a case of distressing menses recurring monthly in consequence of leaving the ovaries after hysterectomy; therefore, unless the patient has passed the menopause, they should if possible be removed on principle.

DR. H. T. BYFORD said: I would like to ask whether such ligatures as Dr. Dudley speaks of could be prepared beforehand? [Dr. Dudley: You might prepare 300 of different lengths and select the one you want.] With such a quantity of fresh ones on hand one could undoubtedly find one to use. Schroeder's later percentages are, I believe, a little more favorable than Dr. Dudley seems to think, and enable him to claim, with some degree of reason, that his intra-peritoneal method is the best.

THE PRESIDENT said: One word in relation to the remarks of Dr. Dudley concerning ligature: The shoemakers' stitch, using the silk ligature, was introduced in 1881, by Dr. Marcy,

of Boston. I am not informed how many times it has been used. It comes nearer obviating the difficulties of the silk ligature, I think, than any other plan in use. His method is sewing the cervix with the shoemaker's stitch. One end of the silk ligature is carried through by a strong needle threaded at the point and mounted in a handle. This is then unthreaded and the other end threaded, bringing this through as the needle is withdrawn. In this way both ends of the suture lie in the same opening in the tissues, though running in opposite directions. Other stitches, as many as may be needed and as near together as is deemed necessary, are inserted in the same way.

This is a continuous suture, and consequently more elastic than the ordinary suture, and there is but one knot, at the termination of the suture, and if there seems to be danger from hæmorrhage a second row of sutures may be put in at right angles to the first. In the cases I have known with this suture there has been no difficulty from hæmorrhage or sepsis. The tumors were not large, and perhaps that explains the success of the method. I have never had an opportunity of trying it. It seems to me very desirable to use silk if we can to stop the hæmorrhage or oozing from the vessels. I don't exactly know Schroeder's plan of using the double row of stitches, whether it is substantially this method or not. One thing further which Dr. Merriman has touched upon, and which we should all profit by, viz.: that when there is evidence of sepsis, slight or considerable, we should open the abdominal wound. In all the autopsies I have made after these operations where sepsis has been the cause of death, I believe they could have been saved if the wound had been opened and properly treated three or four days before the death of the patient.

DR. H. P. MERRIMAN said: I was so fortunate as to be present at Dr. Etheridge's operation. One point that he did not mention is that after the removal of the tumor and after the use of the ligatures, which he applied to each artery by itself, and not in one mass around the pedicle, the pelvis was entirely dry, so much so that when the question of a drainage-tube came up, I believe every one present said they could see no reason for its use. There was no exudation. The sponge came out hardly colored after it was placed in contact with the surface that had been denuded, and there was apparently no need of drainage, yet afterward we had oozing from this surface and the formation of bloody serum in the cavity, with septicæmia as a result. I was present at the autopsy, and am convinced that had a drainage-tube been used this patient would have recovered. I don't know but that if after eight or nine days, when the symptoms began to show septicæmia, there had been an opening of the cavity, the septic material might have been removed and the case have had a fortunate termination. The danger seems to me to come from septicæmia rather than from any direct loss of blood there may be from hæmorrhage, although I can see that there might be, even with the drainage-tube, sufficient exudation of the parts to exhaust the patient and produce a fatal termination. There was one thing that struck me with considerable interest, and I don't know what bearing it may have. She had taken ergot uninterruptedly for a year with a general improvement of her health; after this use of the ergot she became pregnant for the first time in her eight years of married life. Was it a coincidence or was there some relation between the use of ergot and pregnancy?

PROFESSOR C. T. PARKES said: I am very much interested

in this discussion, as it has brought up the question of how to treat the pedicle. Out of five hysterectomies that I have done, four by the intra-peritoneal and one by the extra-peritoneal method, the one that was treated by the elastic ligature died quicker than any of the rest. I am not favorably impressed with it, and think it is an unsafe ligature to use because it never ceases acting; it succeeds in stopping bleeding, but it is apt to stop all circulation, and in quite a number of these cases the portion beyond the ligature sloughs and you have a sloughing wound, and may have the slough lodging in the peritoneal cavity. In the case just referred to the stump of the uterus sloughed and was a stinking, decomposing mass on post-mortem examination. Another objection I have to this ligature is that it can be applied only to the uterus, the stump itself. There are many cases where, from one circumstance or another, you are led to operate and in which the tumor does not always have a pedicle that can be embraced by any ligature. The plan that I have used for a number of years in employing the elastic ligature for other purposes, is to draw it taut and tie the ends together with silk. By fastening the ligature while tightly drawn, you can cut the ends fairly short and have no knot at all. The plan I adopted in the operation reported tonight, was a combination of the silk ligature and the cautery. I believe it to be the best method. I was very much impressed on reading Dr. Keith's recent work on uterine tumors, by an expression in reference to the treatment of the pedicle. He now treats it almost entirely by the extra-peritoneal method, but thinks the intra-peritoneal will be the coming method, the pedicle being secured by some application of the cautery to the divided surfaces. This is the best method for controlling hæmor-

rhages. Often there will be certain spots where arteries of some size come up through the tissue, and perhaps an isolated ligature will have to be applied to them. I don't believe that any wound in the peritoneal cavity that is at all extensive in character, should be left without drainage. I have been satisfied, in the cases that have come under my observation, that one of the main causes of death has been from the neglect of this precaution. When I have divided a large surface, whether I have a dry cavity or not, if that surface is free in the peritoneal cavity, I shall use drainage. I do not think that it is possible to make any comparison between laparotomies for uterine tumors and ovarian tumors. There never will be the same conditions and the proportion of recoveries will never be the same. Dr. Keith does not pretend to say that one out of fifty of the cases that come to him are subjected to operation. I believe the proper method of controlling hæmorrhage and treating the stump in uterine tumors is by the combination of the silk ligature and searing the stump. The heat of the cautery I use is always a dark red. I have always adopted the plan of putting on to the stump that is to be seared the compress forceps or clamp, leaving a quarter of an inch of the tissue above it, and burning that down close to the forceps until it is perfectly smooth. I have always drained through the external wound, normally the abdominal cavity is closed and abhors any abnormal effusion; the elasticity of the walls and viscera presses it out if an opening be present.

PROFESSOR BARTLETT asked with reference to a case of double ovariectomy: At the time of the operation it was noticed that notwithstanding active purgatives had been used previously, the descending colon was full of hardened fæces;

she subsequently developed obstruction of the bowel and it was impossible to get any motion at all. I examined the rectum high up, found a tight stricture, and got the bowels emptied after this was forcibly dilated.

W. W. JAGGARD, M.D., *Editor*.

2330 Indiana Avenue, October, 1886.

THE AMERICAN ACADEMY OF MEDICINE

Held its Tenth Annual Session at Pittsburg, Pa., on October 12 and 13, 1886.—The meeting was called to order by DR. R. STANSBURY SUTTON, the President.

After considerable routine business, a paper was read by R. J. DUNGLISON, A.M., M.D., of Philadelphia, on "The Laws Regulating Practice in the Different States."

F. N. GERRISH, A.M., M.D., of Portland, Maine, followed with a paper. Subject, "The Best Equipment for Medical Study."

The special committee appointed to report on the best preliminary education for medical students next made its report. The chairman, F. N. Gerrish, A.M., M.D., spoke strongly in favor of a classical education for all students, and referred with feeling to the prostitution of the medical profession by colleges which were little more than mere speculators.

John D. Kelley, A.M., M.D., of Lowville, N. Y., presented a report on "The Status of Medical Education in the United States."

L. P. Bush, A.M., M.D., of Wilmington, Delaware, read a paper on "The Advantages of a Classical Education to the Medical Student and Physician." He took decided ground in favor of a classical education. W. H. Pancoast, A.M., M.D., of Philadelphia, thought that too much Latin and Greek were

studied at a tender age. He thought youths should study more French and German. He referred to the German system of education, and said they are the most classical students in the world.

J. Cheston Morris, A.M., M.D., of Philadelphia, next read on "Prolonged Gestation," relating interesting cases.

A paper by Traill Green, A.M., M.D., Easton, Pa., "The Duties of Physicians to Each Other," was deferred to the annual meeting next year.

A. C. Kemper, A.M., M.D., Cincinnati, presented a paper entitled "A Christian Education the Best Preparation for the Practice of Medicine," which was read by the Secretary.

Henry O. Marcy, A.M., M.D., of Boston, presented a paper asking, "Is Modern Wound-Treatment Scientific?" It was read by the Secretary.

Virgil P. Gibney, A.M., M.D., of New York, read a paper on "Treatment and Management of Tubercular Spondylitis."

Nathan Allen, A.M., M.D., Lowell, Mass., presented a paper on "Physical Culture in Amherst College." He favored gymnastics over feats of ball, rowing, etc., which only developed certain muscles. It was read by the Secretary.

The following new members were elected: J. G. Sloane, A.M., M.D., Monongahela City; M. H. Borland, A.M., M.D., Pittsburg; C. H. von Klein, A.M., M.D., Dayton, Ohio; A. B. Threasher, A.M., M.D., Cincinnati; Phillip Zenner, A.M., M.D., Cincinnati; Richard Hogsden, A.M., M.D., Abington, N. Y.; W. B. Canfield, A.M., M.D., Baltimore; E. Wing, A.M., M.D., Chicago; L. Curtis, A.M., M.D., Chicago; R. I. Buntley, A.M., M.D., Pittsburg; S. D. Jennings, A.M., M.D., Allegheny; W. D. Kearns, A.M., M.D., Pittsburg; John Dubb, A.M., M.D., Pittsburg; N. J. R. Klein, A.M., M.D., Greensburg, Pa.; W. C. Shaw, A.M., M.D., Pittsburg; J. C. Connell, A.M., M.D., Pittsburg.

N. S. Davis, M.D., LL.D., Chicago, was elected an honorary member.

The Nominating Committee reported the following names :

President—L. P. Bush, A.M., M.D., Wilmington, Delaware.

Vice-Presidents—R. L. Sibbett, A.M., M.D., Carlisle, Pa. ; S. J. Jones, A.M., M.D., Chicago ; P. S. Connor, A.M., M.D., Cincinnati ; V. P. Gibney, A.M., M.D., New York.

Secretary and Treasurer—R. J. Dunglison, A.M., M.D., Philadelphia.

Assistant Secretary—Charles McIntyre, Jr., A.M., M.D., Easton, Pa.

The next annual meeting will be held in Washington, D. C., on September 2 and 3, 1887.

BOOK REVIEWS.

BRIGHT'S DISEASE AND ALLIED AFFECTIONS OF THE KIDNEYS. By CHARLES W. PURDY, M.D., *Queen's University, Professor of Genito-Urinary and Renal Diseases in the Chicago Polyclinic, etc.* 8vo, pp, 288, with 18 illustrations. Philadelphia: LEA BROTHERS & Co., 1886. Chicago: A. C. McCLURG & Co.

This work is nicely gotten up; is printed upon good paper, in clear, handsome type, and for a first edition is remarkably free from typographical errors.

We believe it is the author's first venture into the realm of book-making, although he has been a frequent contributor to medical journals. We congratulate Dr. Purdy, first, because he writes such clear, terse, straightforward

English, and, secondly, because he has succeeded in writing so excellent a work on "Bright's Disease and Allied Affections of the Kidneys." The work is divided into nine (9) chapters, as follows: (1) Albuminuria: (2) Uræmia: (3) Acute Nephritis: (4) Chronic Nephritis: (5) Cirrhosis of the Kidneys: (6) Scarletinal Nephritis: (7) Puerperal Nephritis: (8) Lardaceous Degeneration of the Kidneys, and (9) Cyanotic Induration of the kidneys.

In the first chapter we find a very clear statement of the present doctrines regarding albuminuria, together with explicit directions as to the modes of testing for albumen. The chapter closes with advice on the hygienic treatment of albuminuria, which we have read with pleasure and profit, but the subject of "Renal Casts," which is discussed in these chapters—but why, we can hardly see—receives, according to our way of thinking, very inadequate treatment. In a little more than two pages the author condenses all he has to say concerning renal casts. It is undeniably true that the tube-cast is capable of imparting more and more accurate information as to the actual state of the renal tubules in Bright's disease than can be obtained in any other way. Hence the vast importance of the careful study. Hence, also, the necessity of extended descriptions of their varied phases in our text-books. We are, therefore, fully warranted in entering a good-natured protest against Dr. Purdy's book, in which he discusses so important a subject in a manner so unsatisfactory.

The chapter on "Uræmia" is excellent from first to last. For the general practitioner it is one of the best articles on uræmia that we have ever seen. We do not subscribe very heartily to the author's doctrine of giving "subcarbonate of

iron in large doses—twenty to thirty grains—and repeated every three hours,” as a means of “preventing or lessening the intensity of the convulsions,” nor do we consent by any means to allow New York to claim the credit of having “demonstrated” that morphia can be used hypodermically or otherwise in anæmic convulsions, since we have so used it for ten years past, and always in response to sound therapeutic indications.

The two following chapters on “Acute and Chronic Nephritis,” respectively, are quite up to the times in all regards, and are really models of clear, concise composition. They are admirable reading for the young practitioner who encounters his first case of acute or chronic Bright’s disease without much clinical experience, since they are characterized by clear descriptions of the diagnostic phenomena as well as definite and well considered rules of therapeutic procedure. We would modify the term “Nephritis” by some title less general and more definite, as “Tubal,” or “Parenchymatous” Nephritis. On physiological grounds we think strong objections can be urged against the practice urged by Dr. Purdy and others, of “rendering the urine alkaline and maintaining it so by the administration of a saline,” for the purpose of dissolving renal casts, which obstruct the tubules, but we have not time or space to consider the subject now.

Perhaps the crowning chapter in the book is the one on “Scarlatinal Nephritis,” which may be ranked as a classic article on this formidable disease. We should like to quote it entire, but being unable to do that, we must be content with saying that it is justly entitled to great praise as a careful, well-considered and well-written article upon a most

important and interesting subject. Finally, we commend the book to the profession as an admirable treatise on an important class of diseases, which are too little understood by the general practitioner. We have pointed out a few, and we think all, of its faults; its excellences are so many that we cannot even enumerate them. It is not only a Chicago book, but it is the work of a personal friend, and as such we extend to it a hearty welcome. I. N. D.

AN INTRODUCTION TO GENERAL PATHOLOGY. *Founded on Three Lectures delivered at the Royal College of Surgeons, London, 1886, by JOHN BLAND SUTTON, F.R.C.S., ETC. Philadelphia: P. BLAKISTON, SON & CO., pp. 390.*

The author says, "the object of these lectures is to endeavor to deal with the enormous collection of facts, gathered together under the term Pathology, by the application of the fundamental principles of the doctrine of evolution."

The work might have been called, with propriety, an Introduction to Comparative Pathology, since the author strives to throw light upon the most general pathological processes by examples drawn from all classes of animals. He has been particularly well prepared for this work by his education and constant study of comparative anatomy and pathology. The author has written a book that will be novel as well as exceedingly interesting to most practitioners. Very much light can be thrown upon pathological processes, that in man are dark and obscure, by the study of the same or homologous processes in lower animals, and it is this that our author has striven to accomplish.

The chapters that are particularly interesting are those on

inflammation and tumors. In connection with inflammation the author explains the true rôle of the white blood-corpuscle in promoting absorption of solids by intracellular digestion, as do no other authors of text-books. In regard to the etiology of tumors, he adopts fully Conheim's view that minute islands of embryonic tissue exist and form the nuclei of neoplastic growths. Numerous illustrations are cited that seemingly substantiate this theory.

The last chapter discusses "Pathology and the part it has played in evolution."

The entire book is interesting. The illustrations are new and novel and well chosen. The work therefore deserves to be widely read.

N. S. D., JR.

THE PRINCIPLES AND PRACTICE OF SURGERY. *By* FRANK HASTINGS HAMILTON, A.M., M.D., LL.D. *Illustrated with 472 engravings on wood. Third Edition, revised and corrected. pp. 989. New York: WILLIAM WOOD & CO., 1886. Chicago: W. T. KEENER.*

In the preface to this edition, dated March 1st, 1886, the author disclaims any attempt to make the work an encyclopædia of surgery, and says that he describes in all the detail required by the practical surgeon, only those methods, which, in his experience, have been the most satisfactory, "or which, after careful consideration, most commend themselves." Since both anæsthetics and antiseptics have come into use during the professional life of the author, he claims the privilege "to institute comparisons, and to draw conclusions." This privilege he has exercised throughout the book as occasions are presented, and also in the concluding chapter on "The Art of

Primary Union," etc. He claims that the following conditions are necessary in order that primary union may occur, viz.:

1. A good, or at least average, state of the general health, and especially the absence of any systemic infection of dyscrasy.
2. The removal of all foreign bodies from the wound.
3. The effusion of coagulable lymph.
4. No unnecessary violence to the parts, from hands, sponges, sutures, adhesive strips or bandages.

The author claims that if the conditions mentioned above are not secured in incised wounds no amount of antiseptics can secure primary union. He does not believe that the use of antiseptics secures primary union by preventing the access of bacteria to the wound. He claims that Lawson Tait and Keith substantially agree with him, as do many other less distinguished men. The argument cannot be even summarized here, but it is clearly and forcibly put, and is entitled to fair and careful consideration by those who do not agree with the author.

The letter-press of the book is exceptionally good. As a practical guide in general surgery it is excellent, and it will stand, together with the lamented author's classical treatise on "Fractures and Dislocations," as a worthy record of a long, a useful and a distinguished professional life.

A MANUAL OF DIETETICS. BY J. MILNER FOTHERGILL, M. D., *Edin., Physician to the City of London Hospital for Diseases of the Chest (Victoria Park); Hon. M.D. Rush Medical College, Chicago, Ill.; Foreign Associate Fellow of the College of Physicians, Philadelphia, 8vo, extra muslin. pp. 255. New York: WILLIAM WOOD AND COMPANY. Chicago: W. T. KEENER.*

The author of this manual has established a well-deserved popularity among the profession in the United States, which this, his latest, book will in no way diminish. He has been engaged in active practice of his profession for more than thirty years, and, during the last ten, prominently connected with two of the London Hospitals and the Leeds Public Dispensary. His writings have an attractive literary quality of their own, and his opinions never fail to command the respect even of those who occasionally fail to agree with him.

The book is divided into two parts.

The first part treats of the object of food, its forms and their digestion, methods of preparing it, condiments, beverages, stimulants, fluid food, preserved and canned foods, prepared foods, and artificial digestive agents.

This part of the manual is by no means a cook-book, but nevertheless the author has been not only careful to enumerate special dishes, but also to state in a general way how they should be prepared. The discussion of methods of preparation is minute enough for the guidance of any good cook.

The chapters in the second part are short treatises on the proper food in infancy, in adolescence, in adult life, in old age, in acute disease, in convalescence, in gastric affec-

tions, in struma, in anæmia, in constipation and diarrhœa, in phthisis, in chronic heart and lung disease, in Bright's disease, in albuminuria, in diabetes, in glycosuria, in gout, in neurosal affections, for chronic invalids, in obesity, in indigestion, in biliousness, and food given otherwise than by the mouth.

The treatment of the topics included in the table of contents is in strict conformity with the latest physiological knowledge, and is minute enough to form a practical working guide in any form of illness. The author's claim that the dietetics is fully as important as the therapeutics of a case will be denied by few who read the book. His statement that "the time indeed is at hand when systematic lectures on food will be a part of medical education," is that of an enthusiast, but in this part of the world it is as yet not realized.

Beef-tea, as ordinarily made, he classes as a simple stimulant, and refuses it any food-value. His remarks in this connection, on pages 49, 50, 51, 66 and 95 are almost facetious, and the following on page 137 is only too true: "Depend upon it, myriads of our fellow-creatures have perished because those around them did not know how to feed them." And this on page 139: "Where beef tea (as ordinarily made) is given alone on the misapprehension that it is a sustaining food, the system has to exist on its own resources, and too often the patient sinks into a grave not dug for him by disease, but by the ignorance of those who constitute the nurses and attendants."

The practical importance of the subject treated in this little book is far greater than that of many a more ponderous volume. It is not only a valuable book, but also one which

no doctor, who has the best interests of his patients at heart, can afford not to own and read. It cannot be too highly commended.

We notice the following errors in proof-reading, viz: page 7, line 2, "fu l" for fuel; page 152, line 15, the word "mobility" evidently should read "inability"; page 168, line 6, the word "avoiding" should be omitted, in order to make the statement what the author evidently intended; page 168, line 21, the word "flesh" should be "fresh"; on page 251, the word "qunce" should be substituted for the abbreviation "oz."

HAND-BOOK OF PRACTICAL MEDICINE. By DR. HERMAN EICHHORST, *Professor of Special Pathology and Therapeutics and Director of the University Medical Clinic in Zurich.* Volume II. DISEASES OF THE DIGESTIVE, URINARY AND SEXUAL APPARATUS. One hundred and six wood engravings. New York: WM. WOOD & COMPANY, 1886. Chicago: W. T. KEENER.

In these times of active business push and enterprise, the average individual pays but very little attention to the requirements or the preservation of a sound physical constitution.

Any manual, therefore, which shall make us better acquainted with the pathology and treatment of diseases of the digestive system is to be considered as not only reflecting credit on the author, but as proving a decided benefit to the reader.

The volume, the title of which stands at the head of this notice, is a part of the great Hand-book of Practical Medicine, by Dr. Eichhorst, treating of diseases of the urinary and sexual apparatus and forms the June number of *Wood's Library*.

In the present notice it is desired to direct attention espe-

cially to the portion of the book having reference to the digestive apparatus. This consists of the first seven parts of the work.

The first chapter is devoted to diseases of the buccal cavity and salivary glands, the soft palate and the pharynx.

One point that strikes one as being peculiar is the manner in which directions are given regarding the use of medicines, as, for example, on page 16, in the treatment of salivation the author advises the use of atropia sulphate, gr. $\frac{1}{7}$ to ℥ iij water, $\frac{1}{2}$ to one syringe-ful, subcutaneously.

This method of direction is, in our judgment, to say the least, not wise. It is a well-known fact that hypodermic syringes of this day vary greatly in their calibre, so that what would be a syringe-ful of one make would barely half fill a syringe of another make.

This indefinite mode of giving directions as to dosage runs through the whole book. As another example of this peculiar method, in the treatment of acute gastritis the author advises the use of salicylate of soda and bicarbonate of soda, equal parts "as much as can be placed on the tip of a knife, every two hours." It may be that in Germany all knives are the same size and the tips of them hold the same quantity of any material, but in this country such directions would hardly be tolerated.

He says, also, that while the bacterium of rheumatic angina has never been discovered, nevertheless, he believes a cold hardly acts in any other way than by favoring the development of bacteria. This statement is a little hard to reconcile with the one a little farther along, in which he says "heredity occasionally plays a part in the etiology."

The chapter on "Dilatation of the Stomach" is especially full concerning its etiology and diagnosis. Coming next to the

functional diseases of the stomach, the author gives a due amount of attention to gastralgia. Regarding the diagnosis of this affection, he says "the recognition of gastralgia is not always easy." It must be differentiated from rheumatism of the abdominal muscles; neuralgia of the lower intercostal nerves; circumscribed peritonitis; biliary colic; intestinal colic; with radiated pains.

The limits of the present notice will not permit our following, in detail, the author through the rather lengthy chapters on diseases of the intestines, of the liver and pancreas. The consideration of diseases of the liver is especially full for a manual, such as the one under consideration, though not comparing, of course, with some of the more elaborate treatises on the diseases of that organ.

The portion of the book devoted to diseases of the kidneys is very complete, taken as a whole. The chapter on diseases of the sexual organs is lacking in many essential particulars. But in view of the great abundance of literature on this class of disorders we doubt not the small space given to the subject in this work was intentional. Taken as a whole, we consider this work one of the best which the enterprising proprietors of *Wood's Library* have issued.

J. L. GRAY.

DRAINAGE FOR HEALTH; OR, EASY LESSONS IN SANITARY SCIENCE. By JOSEPH WILSON, M.D. *Second Edition.* Pp. 74. Philadelphia: P. BLAKISTON, SON & CO., 1886.

In chapter I, on "Land Drainage," and II, on "Drainage of the Farm House and of the Village," the author discusses the questions of drainage, for the farm and farm house, in so simple and complete a manner, that no reader can fail to understand both the principles involved and the details neces-

sary to carry them out. The idea that the drainage of pine forests is due to the peculiar manner in which pine stumps decay is novel, but put in a very convincing manner.

The author claims that a 2-inch circular drain-pipe is the best form to use, and that it is large enough for the main in a piece of land containing 64 acres. In land-drainage the elliptic and oval forms of pipe "have no advantages which compensate for the additional labor of placing them."

The suggestion, that the upper five feet of the wall of a well should be finished in hydraulic cement, and narrowed "so as to leave an opening only large enough for the pump and a man-hole," is excellent.

The chapter on the drainage of cities is suggestive and practical. The author claims that in following the example of Paris and London, we follow in such a way that we fail to take advantage of the most recent experience of those cities.

The form commended as the best for large sewers, is that in use in Paris. "This has a floor of masonry with a deep channel for ordinary drainage, and there is the arch over it of sufficient capacity for the storm-water." "The best form for smaller sewers is the oval, broad above and narrow below. The floor and lower part to be as water-tight as stones and hydraulic cement can make them, the bricks of the upper part to be also laid in cement." "For the smallest sewers glazed earthenware pipes of the circular form are the best, on account of the smoothness of interior surfaces, and the facility of placing them."

The author condemns the old style of water-closet with the tilting pan-valve, and recommends the simple porcelain hopper closet with hard-rubber floating valves.

The remarks about sinks, and the ventilation of sewers are in accord with the most advanced opinion of sanitary engineers.

The digression in the way of an account of the natural history of the common tape-worm, may serve to deepen the impression of the importance of the subject of stercoral pollution of rivers, at least in the minds of medical men.

The author thinks that "a manufactory of paris green, or the like, might dangerously poison a stream of water; but the organic germs of disease, amoeba and bacteria, trichina and filaria, bilharzia and strongylus, cysticercus, echinococcus, tape-worm, and the like, could hardly pass through the dyer's vats and live. The danger from manufactories is from the sewage of their villages."

The way in which the subject of plumbing is treated is odd. The conclusions reached are, 1: "All kinds of leaky pipes of moderate size, may be instantly repaired by giving them a coat of paint and a wrapping of twine; if a small piece of pipe is missing, a piece of gum hose will temporarily answer to replace it and complete the circuit." 2: "A very small leak in a water-closet, such as no plumber discovers in a common inspection, may waste as much water as a hundred families can actually use." 3: "About two-thirds of all the water pretended to be used in our cities, is mere waste through defective plumbing, so concealed as not to be found in the ordinary inspections." This last statement is based upon the experience of a naval hospital.

The concluding chapter, "Plea for Board of Health," is an account of the experience of a house owner, living in a block of buildings, who found in dealing with the Board of Health that the members were incompetent men in their position. The author thinks that is often true, and that such boards should be composed only of men who practically understand sanitary science.

The author's literary style is at times very odd and prolix, but the book as a whole is excellent and is accompanied by a good index.

HOW WE TREAT WOUNDS TO-DAY. *A Treatise on the Subject of Antiseptic Surgery which can be understood by beginners.* By ROBERT T. MORRIS, M.D. *Second Edition; pp. 165. New York: G. P. PUTNAM'S SONS. Chicago: A. C. McCLURG & Co., 1886.*

This book deserves the enthusiastic reception which it has received. The only important change in the second edition is an attempt to explain the success of Lawson Tait's abdominal surgery without the use of antiseptics. Everyone who reads this attempted explanation will probable form an opinion of his own regarding the attempted explanation. The conclusion of the author's argument is, that while a few men seem able to discard ordinary so-called antiseptic measures without bad results, the great majority cannot do so. He also claims that those who decry careful scientific antisepsis are men who do not understand it.

Complete directions are given for the antiseptic treatment of all classes of wounds, from a simple incised wound to extensive burns and laparotomies, and the steps of the operations are so carefully and fully explained that even beginners can apply them in actual practice. If the principles proclaimed in this little book were rigidly carried out by all surgeons there would be much less inflammation and pus in wounds and fewer deaths both in hospital and private practice. The little volume is destined to do much more good in the world than many a larger one.

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ORIGINAL COMMUNICATIONS.

REPORT OF A CASE OF ACTINOMYCOSIS. *By* A. J. OCHSNER,
M.D.

[Read before the Chicago Medical Society on November 1st.]

Until the autumn of 1877, this patient, aged 56 years, was in perfect health, following his occupation of stock-raising and dealing in livestock. At this time he was engaged in shipping stock to the east. During a very fatiguing journey and much exposure to draughts of cold air, the patient experienced severe pain in the left antrum of Highmore, which he supposed to be neuralgia caused by defective teeth. He consequently had removed from his upper jaw seven teeth which proved to be sound, and he secured no relief. All the other teeth of his upper jaw had previously been removed at different times, having been more or less decayed.

For about six months the patient suffered excruciating pain in the left antrum and in both eyes, continuing each day from sunrise until sunset.

Early in 1878 there was a spontaneous opening of the abscess into the pharynx, the sinus closing and re-opening

repeatedly, each time evacuating a considerable amount of pus and some blood, and giving the patient marked relief.

A portion of the discharge usually entered the larynx at night, giving rise to severe cough.

During the month of May, 1880, the patient underwent a surgical operation, consisting in making an opening through the mouth into the antrum above the first molar, curetting and irrigating the cavity. The irrigation was continued by the patient two or three times daily for two years. During all of this time he suffered severely from pain and weakness.

In the spring of 1882, the patient went to the northern part of Mexico and spent the summer on the plains and among the mountains between this point and Colorado, returning in the autumn to Indiana, with the antrum closed and his general health much improved.

Later during the same autumn he returned to Mexico and remained there in comparatively good health for twenty months. At this time, however, he began to suffer from a sensation of suffocation, which still continues.

In July, 1885, the patient began to cough, the cough subsiding somewhat under treatment, but increasing to an alarming extent in July, 1886, and continuing to the time of admission into the Presbyterian Hospital of this city, October 13th, 1886.

During the months of September, 1885 and 1886, he expectorated blood, but he thinks it came from the posterior nares.

Since the beginning of October, 1886, he has again expectorated mucus and pus, streaked with blood, which undoubtedly comes from the lungs or the bronchi.

He has lost thirty-seven pounds in weight during the past

two years. His position is stooping, the chest is full in front and there is a decrease of motion on the left side, with dullness, roughened respiratory sounds and numerous mucous râles. Below the upper border of the fifth rib and throughout the right side the sounds are normal.

The above history led me to suspect actinomycosis of the left lung, having primarily existed in the antrum. On making a microscopic examination of the sputum, the characteristic fungus was at once found, confirming the diagnosis, of course, beyond a doubt.

The following facts may be of practical interest in connection with this case.

He has been engaged in raising, buying and selling, and handling large numbers of cattle for more than forty years. Among these animals there were many suffering from the disease known as lumpy-jaw, and it was the practice of the patient to cure the animals thus affected, by freely opening the abscess by crucial incision, extirpating as much as possible of the lump and introducing about one drachm of powdered arsenic into the cavity. Repeating this once or twice, usually effected a permanent cure.

300 South Wood street.

THE RELATION OF STATE MEDICINE TO THE PROFESSION
OF ARCHITECTURE. By OSCAR C. DE WOLF, A.M.,
M.D., *Commissioner of Health, Chicago.*

[Read before the Third Annual Convention of the Western Association of Architects,
Chicago, November 19th, 1886.]

In thinking over the various definitions of state medicine, a line from an almost forgotten dramatist suggests itself to my mind: Parkes, whose *Practical Hygiene* is a classic; De Chaumont, his posthumous editor and worthy successor: Duglison, of the *Medical Dictionary*; Mapother, Day, Southwood Smith, Chadwick, John Simon, Sir Lyon Playfair, Bowditch, Billings, Rauch and others have all tried their hands at describing and explaining a subject which still remains

Like wit, much talked of, not to be defined.*

In some respects the latest definition, that of the secretary of our State Board of Health, is the best, as it is certainly the most comprehensive.† Dr. Rauch succinctly defines *state medicine* as the connection of the state with both curative and preventive medicine for the promotion, regulation and control of measures affecting the public health. But for the object of these remarks I shall confine the term to its old signification as illustrated by Dr. Parkes, namely: The legal regulation of the conduct of individuals towards each other in strictly sanitary matters. "For example," he says, "pure air is a necessity for health; but an individual may have little control over the air which surrounds him, and which he must draw into his lungs. He may be power-

* Thomas Outway, author of "Venice Preserved," etc.

† Address in state medicine, before the American Medical Association, St. Louis, May 6th, 1886.

less to prevent other persons from contaminating his air, and thereby striking at the very foundation of his health and happiness.”

What, then, shall it avail a man, though he have the wealth of Cræsus and employ the lineal descendant of Vitruvius Pollio himself to design his stately mansion, if the conditions beyond his own control necessary to ensure a prompt removal of his household-wastes, the protection of his water-supply from pollution, and the freedom of the air he breathes from contamination, be disregarded by that organization formed “to promote the general welfare,” and which we call the state? Though there be observed in the building itself all the canons of all the authorities on ventilation and heating—from Dr. Arnott, who set himself the simple problem of securing “at will the temperature most congenial to the human constitution, and air as pure as blows upon the hilltop,” down to the latest patentee of the newest “Automatic Zephyr Ventilator and Breath of Spring Pulsifier”; though the highest skill of the sanitary engineer and the most consummate art of the sanitary plumber be lavished upon its appointments, a man’s house may, nevertheless, be anything but his castle against the foes to his health, if these be fostered and recruited by municipal neglect and state indifference.

Without the aid of State Medicine the architect will build the house in vain. He may successfully cope with the vicissitudes of a climate such as we have here in Chicago, where the mercury ranges from 22° below to 95° F. above zero—a variation of 117 degrees; where for months together less than an inch of rain may fall in 30 days, and then anon a tropical down-pour of five or six inches in 24 hours. He

may even forecast the meteorological future and plan for a 25 per centum increase in the annual rainfall, such as is shown by the record to have taken place in this city within the past fifteen years. He may provide for possible seismic phenomena; construct fire-proof walls and incombustible interiors; arrange for light in quantity and direction sufficient to satisfy a German oculist, air-space and ventilation adequate to the demands of Angus Smith, plumbing scant and simple enough to meet the approval of that anonymous architect who recently announced in the *New York Evening Post* that the best plumbed house is that which contains the least plumbing. He may do all this only to find his best efforts set at naught by conditions which legalized authority alone can satisfactorily adjust or remedy.

It is this authority, directed to removing causes which injure the health of the people, that constitutes State Medicine, and it consists in that body of legislation—whether municipal ordinance, act of General Assembly or federal statute—which is intended to promote the sanitary welfare of the community. It embraces not only provisions for the prevention, exclusion or limitation of disease—by quarantine, isolation, disinfection, etc.—for enforcing vaccination, prohibiting food-adulteration, punishing the creation and maintenance of nuisances, protecting water-supplies, etc., etc., but, also, a rapidly increasing volume of legislation concerning the construction of buildings with reference to their security from fire, to their lighting, ventilation, drainage and occupancy.

“After medicine,” says Mapother,* “the professions most

* Lectures on Public Health, delivered at the Royal College of Surgeons in Ireland, 1864-67.

concerned in the preservation of the public health rank those of the architect and engineer." And the genial and scholarly Irish professor of hygiene did not hesitate to acknowledge his indebtedness to "those most useful professions" when speaking of ventilation, water-supply, baths, public parks, hospitals, lodging-houses, and the dwellings of the poor. It is the fashion just now to decry at least one of these professions, and we are told in a chapter on the construction of habitations in a recent text-book of hygiene, that "Architects and builders have not kept pace with the sanitarian in the study of the conditions necessary to be observed in building a dwelling which shall answer the requirements of sanitary science."

Still more recently a well-known sanitary engineer quotes the president of the Glasgow Institute of Architects as saying: "To most architects, and especially to young architects, the construction of a building is probably, and the sanitary arrangements, shall I say certainly, the least attractive branch of their professional work; and yet it is the branch of their work which most directly affects the health and comfort of our clients." The author of "The Sanitary Drainage of Houses and Towns" ventures to think that the president of the American Institute of Architects would not differ very much from his Scotch colleague in his opinion that architects attach too little importance to their responsibilities in connection with the drainage of houses which they plan and for every detail of which they ought to have a feeling of personal accountability. And he adds for himself, based on his own experience in connection with plumbing work in houses designed and built by many of the very first architects of the country, "that the architects who know,

who think or who care very much about the practical details of house-drainage are very rare; and that they are more rare among the leaders of the profession than among those who, having less artistic merit, are driven to achieve reputation in practical matters." There are architects and architects, and this sanitary engineer has evidently had to do mainly with other than members of the Western Association, among whom I happen to know many who combine both artistic merit and that sincerity which Emerson commended in him who "builded better than he knew."

It may be true that some architects are open to the strictures of these writers; but I apprehend that the true explanation of any seeming disregard of what sanitarians consider the essentials of domestic architecture lies with the *clients* of the architect in their want of definite knowledge of these essentials and of their paramount importance—rather than with the architect himself. In his work on the "Principles of Ventilation and Heating and their Practical Application," Dr. Billings touches one root of the trouble when he says: "Every one who has occasion to examine the subject discovers that it is difficult to secure good ventilation throughout a building, but very few know what the principal difficulty is. Many persons seem to suppose that it depends upon some properties of gases as yet unknown, or upon some mysteries connected with the fact that heat is a mode of motion of the molecules of matter which can only be expressed in complicated mathematical formulæ. The essential difficulty, however, which architects and engineers will find most prominent is that of cost. If the question of expense be entirely set aside, ventilation becomes a comparatively simple matter." So, too, I presume, the architect who has as tractable a client as Mr. Howells portrays in

the "Rise and Fall of Silas Lapham," and who receives *carte blanche* as to sanitary details in general, finds no insuperable difficulty in satisfying the "requirements of sanitary science."

But even when this is withheld, it is clearly incumbent upon the architect, from his earliest interview with his client—whose sanitary ignorance may, as a rule, be safely assumed—to keep him advised of the importance of these requirements. It is the architect's duty, as Billings says, to see that "after the various additions to the plan, which will be made at the suggestion of the owner's wife, and several of his friends, on whose taste he relies, have increased the cost above what he had intended, he does not, in the spasm of economy and retrenchment which will attack him, make the reduction in the ventilation," or drainage, or other sanitary necessity, rather than on some of the ornamental work outside. What your duty is, however, I do not need to tell you; still less do I assume to instruct you in those engineering and technical details which are of the essence of your professional attainments. When the public comes to know the value of the conditions of health in the home, and is willing to pay the cost of them, the architect will not be found wanting.

"But how can he expect that others should

Build for him * * *

* who for himself will take no heed at all!"

A more profitable and appropriate line of comment by a Commissioner of Public Health, accorded the privilege of addressing the members of a profession so intimately concerned with "the life o' the building," is afforded by a consideration of some of the architectural causes of disease and the rôle which state medicine may play in securing their remedy.

During the last census year the causes of a total of over 750,000 deaths were reported in detail. Of this number the group of general diseases to which diphtheria, typhoid or enteric fever, cholera infantum, etc., belong, furnished more than 200,000, and the group to which consumption belongs furnished 136,000 more. Fully one-half of the total mortality of the country is properly credited to the preventable diseases. Not all of these, it is true, are wholly preventable by any attainable perfection in the construction of habitations. Given the introduction of the particulate germs of scarlet fever, for example, into a family housed in accordance with the most approved hygienic requirements, and the disease will be as certainly developed as these germs find access into a susceptible organism. Pure air, unpolluted water, spotless cleanliness, in themselves, afford no protection against these specific communicable diseases. There is this, however, to be said concerning the whole class of eruptive fevers—small-pox, measles, scarlet fever, etc.—as well as diphtheria, whooping-cough, and other diseases whose propagation and dissemination depend upon a particular contagium, to-wit: That the subsequent safety of the dwelling into which such a disease has once obtained access, is very largely a question of its architectural construction. The solid particles of these contagia, dried up into a mere dust, absorbed by porous bodies, attached to adhesive surfaces—retain their poisonous properties for varying periods, some of them for a practically unlimited time. Before the discovery of Jenner had thrown its ægis of protection over the world, almost every dwelling was a perennial center of small-pox infection; and it is not yet definitely known how long this poison, or that of scarlet fever, diphtheria, erysipelas, hospital gangrene, etc., may remain potent in the plaster of a wall or ceiling, or in the woodwork of a

room. Thanks, however, to modern sanitary science, this class of diseases is steadily losing its deadly preponderance, and out of the total of deaths each year, it now furnishes less than 10 per centum. With better housing, purer water, fresher air and more wholesome food, comes a greater resisting power to all forms of disease; and sanitary architecture goes hand-in-hand with the other branches of sanitary science in restricting the sway of preventable disease.

And yet that there still remains much to be done is shown among other facts, by the statistics of mortality from consumption and pulmonary diseases. More than 100,000 persons will have died in this country during the present year from pulmonary consumption alone—more than one-eighth of the total mortality from all causes combined.* With the stock illustrations concerning the evils of impure air—the Black Hole of Calcutta, the Grotto del Cane, the bird and the bell glass, etc., we are all tolerably familiar; but, at the risk of taxing your patience, I will briefly refer to what has long seemed to me the most striking and conclusive experiment of this kind ever made. A body of men, rigidly selected by strict physical examination, at the best period of life; engaged in open-air duty of a moderate character; comfortably clothed, well fed, housed at considerable expense; and promptly cared for, even in slight illnesses, by the highest medical skill—in short, the British soldier in barracks, at home, in time of peace—was found to be dying off at the rate of 17.5 per thousand, per annum, at the same time that the mortality of both town and country populations combined was only 9.2 per thousand at the same ages, and of the country population at those ages alone, was only 7.7 per thousand.

When the cause of this great disparity came to be investigated, it was discovered that the diseases known as pulmo-

nary were the fatal maladies, which specially affected the soldier and laid him low. It was discovered that while in civil life the deaths by pulmonary or chest diseases at the soldiers' ages were 6.3 per thousand, they amounted in the cavalry to 7.3, in the infantry of the line to 10.2, in the guards to 13.8. Of the entire number of deaths from all causes in the army, diseases of the lungs constituted the following proportion: In the cavalry 53.9 per centum, in the infantry of the line 57,277, and in the guards 67,683 per centum. Pushing their inquiries one step farther still, the reporters came at last to the kernel of their task. Why should these selected soldiers suffer so especially from diseases of the chest? Was there anything in their occupation, in their clothing, in their diet, that would account for the phenomenon and indicate the pre-disposing causes of their excessive mortality from pulmonary disease? On these points the reporters were able by the process of exclusion to remove many suspected causes. They were able to exclude night duty, want of exercise, unsuitable employment, and intemperate and debauched habits. These influences the inquirers did not, of course, ignore, but by comparison they found them insufficient to account for the disparity which was seen to exist between the soldiers and the other classes of the community.

I quote the rest of the story from the graphic pen of Benjamin Ward Richardson, whose "Field of Preventive Medicine" is at once the most charming and the most instructive volume in sanitary literature: "At last they came upon one cause which they could not exclude, and which, in accordance with the Newtonian saying, was both true and sufficient cause to account for the phenomenon. That one cause, or rather that one series of causes, was overcrowding, insufficient ventilation, and nuisances arising from latrines and defective sewer-

age in barracks. A single agent, *vitiated air*, acted with such intensity, especially when superadded to a certain degree of exposure, as not only to produce in the foot-guards an amount of chest-disease and especially of pulmonary consumption, greater than was produced in civil life by all the other causes united, but actually to carry off annually a number of men nearly equaling in the infantry, and actually exceeding in the guards, the number of civilians of the same age who died from all classes of disease." Dr. Richardson justly characterizes the record of these observations as the best and most forcible, because most extended and accurate, that has ever been supplied respecting the influence of confined air in the living and sleeping-apartments of men who are accustomed even to an active life and to the enjoyment of much out-door exercise. If it had been desired to carry out a great physiological experiment in order to determine how diseases of the lungs might be artificially induced in men who had been healthy up to the time of the experiment, no method could have been devised that would have led to a series of results more striking or more convincing. Neither could the experiment have been more satisfactorily concluded than was done by following the recommendations of the commissioners. They recommended that an entirely new system should be introduced into barrack life; that air, fresh and pure, should at all times circulate through the buildings, and especially through the dormitories, and that every soldier should have efficient and sufficient breathing space. Since these regulations have been in force the subjects of this experiment no longer occupy the unenviable position of being first in the ranks of those who fall victims to pulmonary consumption and other affections of the respiratory organs, but are rather the models of a lower mortality; so that as the jails, once the foci of fever, are at this time the most

free of that disease, the barracks, once the foci of consumption, are now the most free of that destroying malady. In the jail in its very worst condition of foul air, the disease *typhus* was the scourge; in the barracks with foul air, but less foul, *consumption* was the scourge. With pure air substituted in both places, both diseases have been enchanted away. Well may Richardson say that lessons such as these should never be cast aside while yet in many of our best houses—best in relation to their appearance and cost, not in respect to their construction—the errors that were common in the barrack are still present, and rooms are used as sleeping-rooms which stand in the eyes of the sanitarian like so many experimental boxes for the synthetical development of pulmonary disease. “The room is too small; the room is devoid of a fireplace; the room is devoid of a ventilator; the room has a window that will open with difficulty and at best but a little way; and yet that room is used as a sleeping-room for one or it may be two persons. These are the rooms in which they who are disposed to pulmonary affection find their early fates; these rooms are the vestibules to the grave.”

To this picture, as a fitting contrast, may be added the following seven points suggested as the “charter of health” which a house should have, in its construction and its architecture, to fit it for human habitation:

It must present no facilities for holding dust or the poisonous particles of disease; if it retain one it is likely to retain the other.

It must possess every facility for the removal of its impurities as fast as they are produced.

It must be free from damp.

It must be well filled with daylight from all points that can be charged with light from the sun without glare.

It must be supplied with perfectly pure air in steadily changing current.

It must be maintained at an even temperature.

It must have an abundant supply of pure water.

Such houses are by no means impossible ideals. They have already been realized in many of our suburban towns, and, by the agency of State Medicine, they may be made possible even in cities. As many of you are aware, the forthcoming session of the general assembly of this state will be urged to pass a law framed under the auspices of the Illinois State Association of Architects, to provide for the regulation and inspection of the sanitary construction and alterations or modifications of buildings in cities and villages, and to secure proper ventilation and sewerage-systems for habitable buildings, etc.

This act is intended to supplement existing legislation upon the subject, and under which in this city alone a great saving of life is annually effected.

Section 686 of the city ordinances declares that, "It shall be the duty of the commissioner-of-health to enforce *all* the laws of the state and ordinances of the city in relation to the sanitary regulations of the city, and cause all nuisances to be abated with all reasonable promptness," etc.

This ordinance is very general in its character, but there are many others which apply directly to specified unsanitary conditions in all classes of buildings, and under this legislation the sanitary work of the city is divided into—

First. The sanitary work performed in occupied places of habitation and which includes all buildings wherein any person may dwell or lodge.

Second. The control of the sanitary conditions and safety

as relates to egress, protecting machinery and storage of dangerous materials in places of employment or service.

Third. The exclusive control under the state laws of all the sanitary arrangements or conditions, such as the heating, lighting, ventilating, plumbing and drainage to be provided in every building within the city, during its construction and which is to be used as a place of habitation.

Section 1347, of the city ordinances, declares, "That no person shall hereafter erect, or cause to be erected, or converted to a new purpose by alteration, any building or structure which, or any part of which, shall be inadequate or defective in respect to ventilation, light, sewerage, or any of the usual, proper or necessary provisions or precautions for the preservation of health."

The state laws invest the commissioner-of-health with authority to control all the sanitary arrangements to be provided in any habitable building within the city.

The enforcement of these laws by the inspectors has been the means of accomplishing more valuable sanitary work than by all other ordinances combined, in that by their enforcement, all improvements made are of a *permanent character*, and place the building, except in cases of accident, in a permanently good sanitary condition, thereby benefiting all occupants uniformly throughout the city.

The construction of dark, damp, unventilated living-rooms has been wholly prohibited for the past two years. All water-closet rooms are provided with sufficient external light and ventilation, and are never permitted to be in any way directly connected with any habitable room. In fact, all sanitary conditions in the construction of buildings in this city are now enforced which are in anywise conducive to the health of the occupants.

What *state medicine* may do to regulate the conduct of individuals toward each other in strictly sanitary matters, and so to promote the end of hygiene, which aims at rendering growth more nearly perfect, decay less rapid, life more vigorous, death more remote, is well illustrated in our neighboring town of Pullman, where a corporation stands in the relation of the state to the community in this regard. I have already treated of this town from a *state medicine* standpoint, and I will only now cite its death-rate as the sufficient criterion of the success which may attend the plenary control of the sanitary conditions of human life.

The town has now been in existence six years, and its population is about 9,000—a period sufficiently long and numbers great enough to eliminate any exceptional conditions which might obtain. The death-rate of the town of Hyde Park, of which Pullman is legally and territorially a part, in which the same natural conditions exist, and which is occupied by substantially the same kind of population as that of Pullman, averages 15 per thousand annually, according to the last report of the State Board of Health. In Pullman the deaths have ranged from 6.9 to 7.6 in every thousand of population, or less than one-half the deaths in the territory immediately surrounding the town.

The average for American cities is over three times this number, and the average annual death-rate of the world is 32 out of every thousand of population. The average death-rate in the City of Mexico is 56 per thousand, or eight times the rate in Pullman. The healthful conditions here are unequaled by those in any city of the world. The lowness of the death-rate is remarkable. With one-quarter of the number of the physicians that ordinarily administer to a popula-

tion of this size, Pullman has only a little more than one-quarter of the deaths usual in the same number of people.

Gentlemen of the Western Association of Architects, your profession is one of the highest exponents of the material attributes which differentiate man from the beasts which perish. Man alone makes for himself an artificial climate, outwits the elements, and makes all nature tributary in his habitation to the conveniency, strength and beauty which your ancient authority Vitruvius says are the three requisites in every structure, and without which no building can merit our esteem and approbation.

If, as Sallust says, "Every man is the architect of his own fortunes," you, gentlemen, are more than the architects of your own. To your professional intelligence, sincerity and skill, every man must trust for that without which fortune is but a dead sea fruit—a healthy life.

A REPORT OF FIVE CASES OF STRICTURE OF THE RECTUM,
WITH REMARKS ON THE TREATMENT OF ITS MORE
SEVERE FORMS. *By A. E. HOADLEY, M.D., Professor
of Anatomy, Chicago College of Physicians and Surgeons,
Professor of Surgery, Chicago Polyclinic.*

[Read before the Chicago Medical Society, November 1st.]

For the purpose of demonstrating that one plan is better than another, in the surgical treatment of any disease, it is necessary, in a measure at least, to show the results of both methods.

With this object in view, I have selected the following five cases, some of which in themselves illustrate more than one plan of treatment. Such cases must necessarily show

some errors of judgment, or they could not serve the double purpose of illustrating good and bad treatment. Furthermore, a badly treated case honestly reported often teaches a better lesson than the report of one that has been skillfully managed.

CASE I.—Mr. J. H. German, engineer, forty years of age, gave a history of hæmorrhoids of eight years' standing, and stricture of two years. Examination revealed a hard carcinoma of the rectum within one and a half inches of the anus, and immovable on account of adhesions to the sacrum. All of the adjacent parts were infiltrated, and the bowel completely occluded. The general condition of the patient was very bad. He was emaciated, bed-ridden, and suffered almost constant pain. His abdomen was much swollen and very tender, the bowels not having moved for a period of two weeks. All food was immediately vomited. He only took small quantities of wine and water. Pulse was 120 and feeble. His temperature, 102° F. At the first examination I succeeded with the finger in changing somewhat the relation of the cancerous mass that protruded into the rectum from the front, and which was also adherent to the posterior wall. The adhesions being very carefully separated, the tumor could be brought down to a slight extent, which enabled me to pass the nozzle of a syringe beyond the stricture. This was done without any laceration of the tissues of the tumor, a thing always to be guarded against in the examination of malignant stricture of the rectum. With the nozzle of the syringe in position I injected a half pint of soap-water which immediately escaped and brought with it a little fecal matter and considerable gas. The injection was ordered to be repeated through the afternoon and

evening as often as the patient could endure it. On the following day I was informed that five injections had been given, with the effect of bringing away considerable fecal matter and gas, resulting in great relief to the patient. He could then take beef-tea and retain it. His pulse was 100. His temperature 100° F. As an attempt at opening the rectum was so painful, he was allowed to go three days without further treatment, when it again became necessary to do something for him. Ether was administered and, by careful use of the finger, sharp curette, and knife, an opening large enough to admit a finger was formed. This operation was followed by great relief generally, but there remained severe tenesmus and pain with and after each act of defecation. Two other like operations were performed, which resulted in the formation of a fair canal through the cancerous mass, but without relief from pain. The patient had from the first refused to have anything like a surgical operation performed. What he had already endured, in the way of operations, was regarded by him as a means of stretching his stricture. But the patient was getting discouraged, and had decided to die without further treatment, when, with great difficulty, I induced him to submit to one more stretching operation. At this time I divided the lower end of the growth and the sphincter ani with one stroke of the knife. There was but little hæmorrhage, which ceased entirely within five minutes. With the exception of the occurrence of a small and very painful ischio-rectal abscess, which developed after this last operation, he suffered no more pain in the ano-rectal region. There was more or less pain in the lower part of the abdomen and back, necessitating the use of morphine once or twice a day. The relief

obtained by *the division* of the sphincter was ten-fold greater than that from all the other operations together. A persistent diarrhœa, from extension of the disease, hastened his death, which occurred two months later. Although there was rectal incontinence, he would have sufficient warning to prepare himself for the coming passage. What I most regret in the treatment of this case is, that I did not, at the first operation, divide the sphincter and the cancer above it, so that there would have been perfect freedom for the discharges, and rest for the sphincter. Had I done this my patient would probably have had one month more of comparative freedom from pain, and would not have suffered the pains of an ischio-rectal abscess.

CASE II. Mr. G. English, a laborer, 42 years old, gave a history of hæmorrhoids and stricture of five years' standing, and a very unsatisfactory history of syphilis. Examination revealed, within two inches of the anus, a firm, unyielding stricture, which barely admitted the tip of my index finger. The most distressing conditions were diarrhœa and tenesmus. With some stretching and nicking, I was soon able to pass my finger beyond the first joint through the stricture. As syphilis could not be excluded, I put him on large and increasing doses of iodide of potassium, and commenced systematic dilatation, passing a bougie twice a week for four weeks, at which time I could, without difficulty, pass a number 10 rectal bougie one inch in diameter. There was no particular irritation at the seat of the stricture. He could, after that, defecate without difficulty. Further dilatation was stopped, and the iodide of potassium continued in forty-grain doses three times a day. Two months made no change in the quality or quantity of the stricture-tissue. The

passage was still so large that there was no obstruction, but the bowels were very irritable, the pain and diarrhœa gradually getting worse, and the patient evidently losing flesh. He begged to have something done for his relief, and readily consented to have the stricture and sphincters divided, which was thoroughly done, and the wound packed with gauze on which a little dry persulphate of iron had been sprinkled. Great relief followed the operation, and the diarrhœa immediately subsided. There was no pain, his appetite returned, and he slept well, until the fourth day, when he suddenly imagined that he felt very bad because he had had no movement of his bowels in the meantime. A small dose of licorice powder at night relieved his bowels, and also his mind. The following two months he was annoyed by incontinence of gas and liquid fæces, but he stated that the annoyance of incontinence was nothing compared to the distress caused by the stricture before its division. An examination two months after operation showed that the incision at the stricture and in the bowel below, including half of the internal sphincter, was perfectly healed. The wound of the external sphincter and integument was nearly closed, with good prospect of its being entirely healed within another month. At the site of the stricture there is nothing to indicate that it ever existed. The bowel, on a superficial examination, appears soft and pliant, and as capacious as normal, but with care one can discover that it is slightly thicker at this point than above or below. The thickened condition extends up and down for about one inch and a half. It is soft, and feels like a slight swelling of the mucous membrane. His general condition is improving every day, and he feels much better than at any time during the past year.

CASE III.—Mrs. K., American, aged thirty-nine years, mother of three children, gave a history of stricture of rectum of nine years' standing. She had been treated by several physicians in various ways, with but little benefit. I first saw the case on July 1st, 1886. She was a pitiable object; emaciated to a remarkable degree; walked with great difficulty; had from fifteen to twenty movements of the bowels every day, and every passage was attended with burning, tenesmic pain. On examination I found an almost impervious stricture within one inch of the anus. Vaginal examination showed that there was much mischief above the stricture. I informed her that an immediate operation was necessary to save her life. Still one week went by before she was admitted to the Presbyterian Hospital, in such a deplorable condition that I dreaded to operate lest she die on the table.

I first divided the stricture so that I could introduce my finger, when somewhat to my surprise I found that the rectum contained a carcinomatous growth almost occluding the canal, higher than I could reach with my fingers. It was necessary to divide the tissues posteriorly to admit my fingers, for fear of lacerating the tumor through into the peritoneum. After working my finger as far up the rectum as possible, I divided the sphincters and tissues back to the coccyx, when I was able to reach still higher, but could not reach the top of the mass, which was quite firmly adherent in all directions. I next made a deep incision through it posteriorly nearly to the sacrum, from a point as high up as I could reach with my finger down to the incisions already made through the external tissues. I then quickly placed a piece of gauze in the wound with pressure upon it, to try to prevent bleeding. Although the hæmorrhage was not very free, it was necessary to save every drop of blood possible, as my patient was *in ex-*

tremis. With some difficulty I succeeded in getting a large-sized drainage-tube above the stricture, for the purpose of relieving the bowels of gas and liquid feces. I then finished packing the rectum, leaving the tube in, and, after securing all with a T bandage, put the patient to bed. For four days she lingered at death's door, and then quickly rallied and was removed from the hospital in a week from the time of the operation. In two weeks she was walking about. Her general condition was improving rapidly; the diarrhœa had stopped, and her appetite was good. At the end of five weeks she left the city on a visit, where, at last accounts, she still was. Three months after the operation, she was feeling very comfortable and had gained six pounds in weight, and said in a letter to her mother, "if Dr. H. could see me now he would not think that I had a cancer." I heard from her one week ago, when she was still comfortable, and able to walk out every day.

The following case will illustrate some of the dangers attending the practice of forcibly dilating malignant strictures.

CASE IV.—A German lady, fifty-six years old, mother of several children, had always enjoyed good health until the last three years, when she became aware of the presence of a stricture of the rectum. She had done little for it until it had so nearly closed the bowel that she could endure the distress no longer, when she applied for treatment. Examination disclosed a close, firm, annular stricture, within one inch of the anus. The stricture with the sphincters were divided, and on introducing the finger, the bowel was found blocked up with other strictures, undoubtedly malignant, and of irregular formation, as far as the finger could reach. These were dilated with the fingers, the tissues being quite friable and yielding readily under pressure. The canal was opened as far as I

could reach, without lacerating the rectum itself. Violent inflammation supervened, involving the pelvic cellular tissue, extending up into the abdomen, and for five days it endangered the life of the patient. She made a very slow and tedious recovery, stating that she believed she was made worse by the operation. She went away, and I have heard nothing from her since. As to this case, it is my conviction, that had I incised those strictures, instead of stretching them, my patient would have been spared the dangerous ordeal of an inflammation and would have derived benefit and comfort from the operation.

CASE V.—An American lady, sixty-seven years old, well preserved and remarkably healthy until five years ago, when she became aware that she was afflicted with stricture of the rectum. She could give no history of any cause for it. She had had four children ; her labours had been normal and easy, and from every one of which she made a rapid and perfect recovery. Two years ago she had an ischio-rectal abscess, which resulted in the formation of a fistula, but which did not prove troublesome until some four or five months prior to my first visit, when she again suffered from another abscess and then from a general suppurating* inflammation of the whole ano-rectal region. At this time Dr. G. E. Brinkerhoff was called to attend her, and recognizing the necessity of operative treatment he called me in consultation. Under the influence of an anæsthetic, an examination was made, which revealed two or three open sinuses and as many fluctuating abscesses in the ischio-rectal region, with a very firm annular stricture of the rectum within one and a half inches of the anus ; also, a carcinoma of the os uteri and upper part of the

vagina. The vaginal walls were agglutinated below, but were easily separated, making the diagnosis easy and certain. It would have been better for the patient if the cancer had not been discovered. She was weak, emaciated and cachectic, which seemed as much due to the cancer as to the bowel trouble, and there appeared to be little that could be done for her. I therefore opened the abscesses and sinuses freely, packing them with iodoform-gauze, and divided the stricture without dividing the sphincter, contenting myself with dilating it. The operation was for the relief of pain, as it was believed that the patient had but a short time to live. The relief following the operation was great. The inflammation subsided, her bowels moved easily, and her general condition improved. The cancerous cachexia disappeared and she began to believe that she would get well, when another abscess made its appearance, causing great suffering and prostration. The attending physician wished to open this for her, but she refused and suffered it to break, which it did within the bowel, giving some relief; but as the abscess cavity continued to refill she was not fully relieved until some two weeks later, when the skin covering the sinus gave way, making a complete fistula, with relief of all pain. This condition did not last very long, for the stricture again became troublesome, and in making an examination, which I did with the consent of Dr. Brinkerhoff, I found that the stricture was as closely contracted as at the time of the operation, three and one-half months before. The cancer is about the same and gives her no trouble. Her general condition is comparatively good, and there is no evidence of immediate dissolution. With the present condition of the stricture, however, it is probable that she will

soon be prostrated again. With these facts before her she declines another operation. In this case, again, I have to regret that I did not divide the sphincter with the stricture down to the cellular tissue beneath. By doing this I could have opened the fistulous tract throughout, and the stricture could not have again united, so soon at least, and the patient's last days would have been more comfortable. As it is, she may continue to suffer to the end of her life.

From a study of the foregoing cases we may deduce the following principles, which are in accord with the teachings of the best surgeons of the day.

First.—It is dangerous to practice divulsion of malignant stricture of the rectum.

Second.—Division of a severe stricture of the rectum without dividing the sphincters is of little practical value.

Third.—Division of malignant strictures, with the sphincter, gives great relief and tends to prolong life.

Fourth.—Division of severe non-malignant stricture, with the sphincters, gives great relief and tends to perfect cure.

Fifth.—Division of strictures, whether malignant or not, and of the sphincters, is attended with little danger to life. All severe strictures should be treated by complete division, the cut including all the tissues below and back, as far as the tip of the coccyx. This operation affords, in cases of malignant stricture, the greatest possible measure of relief, and in non-malignant stricture the best means of permanent cure at our command.

683 Washington Boulevard.

A REPORT OF A CASE OF HYSTERIC TRANCE. By C. F. DARNALL, M.D.

Mrs. H. A. H., aged 31, came under the writer's care in September, 1884. She had been married fifteen years, and had given birth to nine children, the youngest being at that time sixteen months old. The patient was a farmer's wife, a household drudge, small and poorly developed, of a phthisical family, nervous temperament, and of ordinary mental capacity. For years she had been afflicted with cough and expectoration and a gradual failure of physical forces. A sudden and severe cold caused a pleurisy, which was the occasion for calling medical assistance. After an illness of a few days and a complication of ailments she convalesced, but an irritable stomach and aggravating cough remained. In the fourth week she was able to be out of bed a short time during each day, when the climax came in the shape of a quarrel with her husband. She had menstruated a few days before, and at this time was seized with an acute pain in the left ovarian region. A few hours after, when conversing about her marital troubles, she suddenly went into a trance. The first thing noticed was a vacant stare and a catching of the breath, a throwing out of the arms at right angles to the body, her legs extended and head thrown back, and then she became unconscious. Her limbs were stiff and resisted all attempts to unbend; the face was pallid, eyelids tightly closed and closing again if forced open; eyes turned upward and moving when touched; pupils slightly dilated and slowly responding to the light. The respiration was shallow and irregular, seven to nine per minute; pulse, 78 to 90, soft and weak; flatness on percussion, sibilant and subcrepitant *râles*. Superficial temperature was decreased, generally 98° in the axilla; sometimes normal, and

rarely 99° or 100° , which was the case when the attack was brought on by any high nervous excitement. Liquid food was slowly swallowed, often being retained for quite a while before causing sufficient irritation to relax the pharyngeal muscles. These variations embrace the symptoms of many attacks she had subsequently. For the first week or so they would come on at eight or half past in the morning and at six in the afternoon, and lasting from one to three hours. The aura would be pain in the stomach, shifting to the left ovary, a slight chill, then the trance. After the initial rigidity passed away, in half an hour or so, she would still be stiff, but the limbs could be moved, the other conditions being the same as at the beginning. Muscular relaxation would all at once take place and she would waken with a start. She seemed then to not understand what had happened; would be restless and change her position in bed; would not speak, but motion for her limbs to be rubbed, for a drink of water, or some such thing. Then she would fall into a natural, deep sleep, lasting from a few moments to a half hour, from which she would awaken with a clear mind, complaining of a general feeling of soreness and fatigue. In the sixth week family matters reached a crisis, her husband leaving her, but returning occasionally to talk over the division of the property. At this time her attacks lost all periodicity, coming oftener and at any time, with less force and of shorter length. If she happened to be sitting in a chair when overcome, she would retain the erect position. For a time there was each day a series of them, each one shorter and weaker than the one preceding, with a period of sleep intervening, appearing as if her nervous force had assumed a tangible form, wave succeeding wave until lost in quietude again.

Her friends then unadvisedly called in a minister to look

after her spiritual necessities, and at the next trance, a little while after, a surprising change took place. Coming in between the stage of lethargic rigidity and the sleep was an apparently lucid interval, during which she would sit up in bed. The eyes were opened wide, filled with a far-away supernatural look, and her expression of countenance was that of one engaged in delightful, dreamy contemplation. It seemed as if another spirit had taken momentary possession of her body, revealing entirely different views and impulses from those which she exhibited when surrounded by ordinary every-day environments. Before, her life had not been governed by religious motives, but now the whole bent of her mind was directed in elevated and exalted channels. Without the statuesque appearance of ecstasy, or the waxen mobility of catalepsy, she assumed a devotional attitude, lasting only a moment. At the visit of the minister a hymn book was left on the bed, and after she emerged from the trance state she made search for it and opened it, when through with the supposed prayer. She turned over leaf by leaf until she found an old familiar hymn known to her in bygone days. The words were unaccompanied by notes, yet she correctly carried the tune through and would sing one or two more. This was done several times a day and for about a week. Her voice was clear and sweet, vibrating in the most touching way. If the key was pitched too high or too low, she would begin again until she was right. If she mispronounced a word or sounded a wrong note, the word or note would be correctly repeated. If any one were to purposely place the book upside down or turn over too many leaves, she would right the book and proceed to the finish without being disconcerted. All this time she appeared

awake, her eyes wide open, pupils dilated, deeply intent upon what she was doing and taking no note whatever of her friends or surroundings. This would last a short time, when she would close the book and sleep, awakening perfectly rational; the wandering spirit had departed its host, her own had returned, and she was herself again. No knowledge existed of what had transpired from the moment she entered the trance nor any memory of visions. All was blank and the time consumed was as nothing. Sometimes the book would be hidden or another substituted before she searched for it. If she could not find it she would look at her hands a few moments in a dazed, bewildered manner, shed a few hysterical tears and go to sleep.

Thus ran the case over three months of time, gradually submitting to treatments, as her domestic troubles were amicably adjusted. Nothing was done to shorten or avert the attacks, yet it looked as if Charcot's method of ovarian compression always relieved her, as she would return to rationality whenever it was employed. As to physical condition, there was enlargement of the left ovary and thickening of the left broad ligament; uterus in normal position, enlarged somewhat, with endometritis and granular erosions. Hysteria disappeared when these local troubles were cured, but owing to the complexities of the case and the many discouraging features arising, recovery was necessarily delayed. Menstruation occurred every two or three weeks; and while she was in bed nearly all the time, yet hardly a day passed that she did not take a *secret smoke*, knowing it was forbidden.

Many remedies were tried, but the bromides, tonics and good food were successful. The monthly flow became

normal, and for two years now there have been only once hysteric symptoms, and then it was *globus hystericus* in the throat and dyspnœa, controlled by the bromides.

Sufficient space has already been taken without entering into speculation as to the pathology of the case, and our textbooks will abundantly supply that.

West Union, Iowa.

THE USE OF ICHTHYOL IN THE TREATMENT OF SKIN DISEASES.

By JOSEPH ZEISLER, M.D.

[Read before the Chicago Medical Society, November 15th, 1886.]

Only a few years ago ichthyol was introduced into dermatological practice by that industrious worker Unna, in Hamburg, to whom we owe so many other practical contributions. The question of its merits was discussed by a number of writers, some praising it enthusiastically, others attributing very little value to it. As to my own experience, the results obtained by me in using this drug for nearly one and a half years were so favorable that I deem it my duty to give an account of the same, and in so doing contribute toward a better knowledge of that valuable remedy. It is not the object of this paper to enter into a discussion of the chemical properties of ichthyol, or, as it is properly called, sulpho-ichthyolate of ammonia. Nor shall I dwell at length on its physiological action upon the normal and diseased skin; this was done in a very extensive manner in Unna's last paper on the subject*, an abstract of which appeared in the *Journal of Cutaneous and Venereal Diseases* of September last. To anyone who is specially interested in the subject, a careful perusal of the

* Ichthyol and Resorcin. Leipzig and Hamburg, 1886.

original will be of the greatest advantage. My own attention was first attracted to ichthyol by a short communication in the *Deutsche Mediz. Wochenschrift*, 1885, wherein Lorenz speaks in the highest terms of its wonderful action in articular rheumatism, when used externally over the inflamed joints. Only short reference was made there to its power of arresting inflammation and relieving local pains. Since then I used it in over 100 cases of skin diseases, and without claiming for it any specific effect, I may say that I owe some of my best results to it, and that I very seldom was disappointed by the same.

In looking over my record, I find that ichthyol was prescribed in the following cases: Eczema, 56; acne vulgaris, 10; acne rosacea, 7; sycosis, 11; herpes tonsurans, 4; telangiectasis, 4; prurigo, 2; pruritus, 2; psoriasis vulg., 2; psoriasis palmaris specifica, 2 cases; seborrhœa, acne varioliformis, lichen pilaris, impetigo contagiosa, purpura rheumatica and ulcera cruris, each 1 case. In some of these it was only used as an adjuvant. In all of them I applied it externally, in the form of salve, the strength varying from 3 to 30 per centum. It mixes very well with all of the ointment-bases; as such, were used mostly vaseline, cold-cream, zinc salve and lanolin, to which were sometimes added other drugs, as adjuvants, like salicylic acid, præcip. album, resorcin, naphthol, sapo viridis and others, according to the requirements of the case. The rather strong and peculiar smell of ichthyol, although not very offensive, can easily be overcome when used in the form of ointments. A slight brownish discoloration following its use will usually soon disappear. No other inconvenience was noticed from its external application, except in a few instances where a slight burning sensation was complained of, especially when used on the face. Several

times I observed that soon after the application of an ichthyol compound the skin would be covered with a watery fluid on the anointed parts, like little dew-drops. Lorenz, who seems to have made the same observation, interprets it as hyperidrosis. Unna very often prescribes ichthyol in watery solution and in the form of a paste. I have so far made no use of these forms, but I think that where only superficial action is desired it may be preferable to ointments for technical reasons. For many cases, particularly acne sycosis and acne rosacea, I found ichthyol soap very convenient. In this form it may be used either like any other toilet soap, or the foam of it may be allowed to remain on the skin for a short while, or even for many hours, according to the effect desired. The physiological effect of ichthyol, when used externally, can be inferred from its chief quality—that is, to draw oxygen from the tissues. Unna therefore calls it a reducing agent, and places it in the same class with resorcin, pyrogallol and chrysarobin. Its regenerative power on one hand, when used in a mild form; its resolving action on the other hand, when used in full strength; its contracting influence upon blood-vessels, can easily be explained from that one principal quality.

Upon the suggestion of Unna, I have in the last five months prescribed ichthyol also for internal use in some twenty-five cases of chronic skin diseases, with apparently very satisfactory result. At this place I cannot resist the temptation to offer a few remarks in regard to the internal treatment of cutaneous diseases, as this question has recently been much discussed. As is well known, the Vienna school very seldom resorts to it, while American physicians, from their somewhat different ætiological standpoint, mostly depend upon the internal administration of certain drugs, claimed to remove so-called impurities of the blood. Without discussing

this fundamental question here as thoroughly as it would deserve, I may say that I believe in a reasonable internal treatment adapted to the merits of each case, inasmuch as sometimes disorders of internal organs seem to have a causal relation to that of the skin. But the daily routine practice of administering arsenic indiscriminately, even without a proper diagnosis, cannot be too strongly repudiated. In a recent article * G. H. Fox made very timely remarks upon this subject, denouncing in strong terms the injudicious use of arsenic. I heartily concur in his views, and would only add that the same have been fully endorsed by many authorities in this country. While arsenic may have even specific effects in lichen ruber and psoriasis, and may be very useful in some other chronic cases of skin diseases, it is, on the other hand, very often without any effect, but perhaps still oftener aggravates the condition which it was intended to allay. I foresee a far wider field for ichthyol. A number of observations on the excellent results obtained by its use in cases of chronic dyspepsia and rheumatism are already published, and I can add some more made in my own practice. It is therefore obvious that wherever the last mentioned affections appear as complications or causes of cutaneous diseases, the latter will indirectly be beneficially influenced by the internal use of ichthyol. It is as yet rather difficult to determine in what way ichthyol taken internally is capable of affecting the skin itself. Clinical observations, however, make it highly probable that it has a contracting effect upon enlarged blood-vessels of the same, as can be seen in cases of vaso-motor neuroses, e. g. acne rosacea; in such cases

* N. Y. Medical Monthly, No. 1.

especially it is recommended by Unna. Private practice affords very little opportunity to make experiments with new methods or new drugs; I am therefore at a loss to state how much of the result obtained in each case was due to the internal medication, as always topical treatment was mostly relied upon. But in several instances I could clearly trace the disappearance of a chronic catarrh of the stomach or a rheumatic affection to ichthyol. Unna also reports good results in cases of asthma and of general mal-nutrition. Unlike arsenic, ichthyol will never be found to molest even a very delicate stomach, though given in doses up to 1.00 (15 gr.) a day; in fact, my patients never would feel any bad effect whatever from its use. I usually prescribe it in form of capsules, each containing 0.10 (1½ gr.), three to ten of which are taken daily after meals. For children, or patients who object to pills, a liquid form will be more convenient. The dose for infants will of course be comparatively smaller.

The fifty-six cases of *eczema*, in which I used ichthyol comprise nearly all forms and stages of that protean disease. Unlike tar, it can be very well applied even to weeping surfaces, which will sometimes get dry in one or two days; small vesicles and pustules will disappear much more promptly than by any other treatment. Its reducing power will best be seen in those hard, infiltrated patches that resist so obstinately the usual methods; they will sometimes get paler and softer within a few days. Itching, which in such cases is almost unbearable, will often be promptly relieved by it. Its regenerative power will, on the other hand, be noticed in cases of chronic *eczema* of the palms and fingers, where even deep fissures will heal up in short time under its application. In two cases of intertrigo on infants, where different methods had done no

good, a 5 per centum ichthyol salve had an almost magical effect after one day. I mention this especially, because Stelwagon, in a note on ichthyol,* says that it is irritating in erythematous eczema. As this writer seems to have seen no positively beneficial effect in the twelve cases of eczema where he tried it, I would like to state here my experience, as follows: In the above mentioned fifty-six cases the effect was excellent in eleven, good in twenty-seven, fair in four, negative in one, and unknown in thirteen cases. The strength used was, on the head and face, from 5 to 10 per centum; on other parts of the body, usually from 10 to 30 per centum; in erythematous forms it should not exceed 5 per centum. Zinc ointment was mostly used as a base. An addition of 5 to 10 per centum salicylic acid often seemed to increase the efficacy in old, infiltrated places. I will not weary you with many illustrations; allow me to cite just two.

I. Mr. E. F. H., 49 years, merchant, had been suffering from chronic eczema for twelve years; it mostly affected the hands and the anus. Chronic dyspepsia; otherwise healthy. When I first saw him his disease was in a very aggravated condition, and presented the following appearance: June 13th, 1886. The entire right hand was considerably swollen, reddened and painful; covered all over with vesicles in all stages of development; some larger blebs filled with purulent contents; eczema vesiculosum of the left hand in minor degree; eczema erythematosum of the neck; eczema madidans on forehead, chin and scrotum. Zinc ointment with an addition of 10 per centum ichthyol was applied to all the affected parts, except the right hand, for which cold applications of thymol 1:1000 were used, by which the pain and swelling were diminished after two days;

* Note on drugs. Journal of C. and V. Dis., November, 1886.

ichthyol salve was then likewise used here. The skin all over the body was so irritable that slight scratching would suffice to produce an erythematous or even a bullous eruption. But the use of the ichthyol salve would usually cause the latter to disappear in one or two days.

June 18th. No new blisters coming out on the right hand; pain, redness and swelling considerably decreased; the smaller vesicles mostly dried, whereas the larger ones became denuded. All other affected spots are nearly healed, except that a slight scaling has set in.

June 22d. All the open places on the right hand are covered with new epidermis, while the old skin peals off abundantly. Ichthyol internally, 0.30 *pro die*

June 28th. Slight scaling on the formerly affected parts. Patient feels very comfortable. Ichthyol capsules, 0.60 daily.

August 23d. Patient has felt excellently during the last two months. His dyspepsia does not trouble him. He assures me that he never was so rapidly cured of any of the outbreaks of his disease.

October 13th. Patient has continued to take ichthyol internally up to now, and feels first rate. There is no sign of his former trouble.

II. Rev. M. N. Chronic eczema of the right lower leg for four years. Twenty-three physicians have been consulted during this time without favorable result.

Status praes. February 13, 1886. The lower part of the right leg very much reddened, somewhat swollen, painful and itchy; covered with small pustules. An examination of the hairs forming the center of these pustules showed them to be in a similar condition as is found in sycosis. The treatment consisted in epilation of most of the affected hairs

and application of the following salve: cold-cream, 40.00; ichthyol, 4.00; acid. salicyl., 2.00. No internal treatment.

February 19. The pustules have disappeared, the skin generally paler, no pain, little itching. Prescribed a 15 per centum ichthyol salve, similar to the first.

March 5, when the patient was seen for the fourth time, no abnormality could be noticed except a slight redness of the skin. The hairs extracted apparently sound.

I lately heard from the patient, who has been all right since.

Sycosis.—All of the above mentioned eleven cases were rather severe and inveterate, so that epilation could not be dispensed with. This method and the use of ichthyol soap and a 10 per centum ichthyol ointment had an excellent effect in four, a good one in seven cases after one to three weeks. The combination with tar-oil and overfatted green soap, recommended by Unna, seemed to me to have an irritating effect.

In *acne vulgaris* I did not notice any remarkable influence of ichthyol, until I used it internally, when it seemed to have a decidedly beneficial effect in three cases.

In *acne rosacea* it worked very satisfactorily in five, remarkably well in two cases. One of these two, the wife of a well-known physician of this city, had suffered from the disease for several years and presented, when I first saw her, the typical picture of the more severe form of *acne rosacea*. Besides a 10 per centum ichthyol-salve and sulphur-naphtol soap, mechanical treatment was made use of from time to time. After several weeks a decided improvement was noticeable. The lady has now been under my observation for nearly one year, and during this time has gradually

improved until now, when recovery seems almost perfect. No internal medication whatever had been used; only of late ichthyol pills were recommended to check a possible relapse.

A similar success was obtained in the other case of a gentleman—a prominent member of the legal profession—who for many years was suffering from that disease. He came under my observation in October, 1885, and was cured after six weeks. He had no relapse during the last year.

In three out of the four cases of *herpes tonsurans* a combination of equal parts of oil of cade, green soap, ichthyol and vaseline had a very decidedly positive effect. In one of them a cure was effected within one week, after many remedies had been tried in vain.

In four cases of small circumscribed *telangiectasis* in the face (so-called rosacea) it had no effect; I suppose because the salve used was too mild to exert a contracting effect upon the ectatic blood vessels.

In *prurigo* it was used combined with naphthol; the effect was very good in the above two cases.

In *psoriasis* ichthyol was only used intermediately, to alleviate the inflammation produced by chrysarobin. In one case, where arsenic could not be given, the ichthyol pills seemed to work very nicely.

In regard to the rest of the above mentioned cases, I would not like to draw any conclusions, because of the small number of observations. Only one case seems to me worth mentioning; that is one of *acne varioliformis*.

A gentleman of thirty-eight had suffered for two years from repeated outbreaks of that rather rare and troublesome affection, which had left numerous scars on the scalp and

forehead. In this case a 10 per centum ichthyol salve, with an addition of 5 per centum hydrarg. ammoniat., made the fresh pustules dry up within four days, and the remaining scars were very insignificant. From a continued use, the whole scalp, formerly very red, got paler, and even the old scars were much less visible.

It is a question of time and continued observations to clearly define the limits in which ichthyol will find its useful application. I hardly think that it will have to share the fate of so many other new drugs, which at first found their enthusiastic admirers, and, after considerable disappointment, sank into oblivion; but I believe, confidently, that it will gain a permanent place in dermatological therapeutics. I am only sorry that a man of Piffard's reputation unjustly places ichthyol in the same rank with cuticura and similar proprietary compounds, because, unfortunately, some enterprising firm in New York seems to have extensively advertised it.* In this city, at least, quackery does not seem to have taken hold of the new remedy. As far as I am concerned, I would by no means, after my experience, like to miss ichthyol from my armamentarium.

125 State Street.

* Note on drugs.—*Jour. of C. and V. Dis.* No. X., 86.

PROPHYLAXIS IN RHINITIS SYMPATHETICA.* By S. O. RICHEY, M.D.

In the evolution of medicine, gradual progress has been made to the present development of *preventive measures* in the management of disease, the practice of which, in its perfection, will be the science of the future. Prevention of disease, and the structural changes consequent, will, when we have the necessary knowledge, be more conservative, more simple, and more agreeable than our efforts to meet the disease in human bodies, disguised often by a complexity of symptoms, and to limit or prevent pathological metamorphoses.

Any rational being will prefer the proverbial preventive "ounce" rather than the "pound," later, and not upon the basis of quantity alone,—though even that might be deemed sufficient,—but upon that of the disagreeable environment and consequences of the disease.

There appear in medical journals from time to time elaborate discussions upon the most efficient means of relief of the *local* symptoms of hay-fever, or rhinitis sympathetica; by therapeutic measures or surgical procedures *after* structural changes have taken place in the nares; but very little is said in regard to prophylaxis, except the suggestion of change of climate—an offspring of the "pollen" dogma.

It is important that we get the idea of pollen out of our minds and accept the rational explanation, as will be done by all sooner or later, that *rhinitis sympathetica* is a reflex affection, or a peripheral expression of a more central disturbance, the impairment of the balance of circulation in the cervical plexus. Thus we have the influenza: the cause being slight,

*McKenzie—Transactions of the Medical and Chirurgical Faculty of the State of Maryland, 1885.

and acting interruptedly, the effect is a number of slight influenzas. 'The same cause acting persistently and gravely for a greater or less time produces what is called "a severe cold."'

What is the cause of so distressing an affection? If it were pollen would it not be found among herbivora, and as much so during the winter season as in the summer among those domestic animals which are stabled and fed upon cured grass, from which the pollen is more likely to escape, and in greater abundance, than when it is green?

Insufficient protection of the body, and especially the spinal region, from decided and quickly repeated alternations of temperature is the initial cause.

In 1880-81 my attention was fixed by finding myself a sufferer from this affection. At that time the tone of my nervous system was very low, but not for the first time. I was also alternating between the city and the country, my days being spent in the city and my nights in the country, and in this I saw no sufficient cause for the disease, for others did the same without suffering, and I recovered with both these alleged causes persisting. Writers on the subject claim both as *predisposing* influences, the first of which I accept, and the latter I repudiate. With the dread of its direful consequences I naturally watched its course closely, in my own case, and studied the symptoms of the approaching crises until they became familiar to me. I looked up my books again for a hope of relief, but found it always resolved itself into seeking another climate for the season, and this my work would not allow. I found, too, that a change to the same place did not relieve all persons so affected, and that sometimes the same person would not be relieved at the same place, twice: These facts induced me to doubt whether any one would be safe from the supposed cause of the affection.

anywhere, until I met a young man who told me that he always found relief by spending the day in a boat on the lake, fishing, for there the *pollen* could not reach him. I then asked him if he wore the same clothes while fishing as at other times, and found that he replaced his *cotton-gauze undershirt* with a woolen shirt.

As I was then wearing the cotton-gauze undershirt, and remembering the slight creeping chills up my spine and at the nape of my neck prodromic of an attack, I put on a flannel undershirt, and with the exception of one or two attacks, immediately afterward, I have been well ever since.

The flannel being too warm for comfort in this climate during July, August and September, in looking through the furnishing establishments, I found an undershirt resembling in texture a fish-net, called in the shops "French netted goods," which I substituted with success and with perfect comfort. It does not, in its continuity, lie close to the body and rapidly absorb moisture, like the gauze; if it becomes damp, it does not dry out so rapidly, and thus by rapid and frequent evaporation, cause alternations of temperature and disturb the circulation of the spinal region with the reflex symptoms called rose-cold.

Those who change their abode in search of relief, go to a higher altitude or a more northern latitude, and while they do not thus escape "pollen," they find it comfortable and often necessary to wear more protective clothing next the skin, and in this fact, I believe, is to be found the cause of their relief. Any kind of material next the skin which will, like gauze, absorb sweat and dry out quickly, would produce the same consequences. One does not have this affection in the winter season, when well clad, unless from force of habit or an association of ideas in an impressionable individual. The affection

is less frequent among women, because they perspire less and less frequently.

In the usual course of things my opportunities for observation of this affection are very limited as compared with those of others, being confined to those in whom it has caused *tubal catarrh*, whose impaired hearing could not be properly improved without removing the cause—the immediate cause being the rhinitis, producing congestion of the lining membrane by extension to the tube; the mediate cause being a disturbance of the spinal circulation. Laborers, especially in the country, in the midst of *pollen*, are less liable to have this trouble, for, being accustomed to constant healthful exercise, they have a more stable circulation, which is not so easily thrown out of balance.

While eight or ten cases are too limited a number to establish a theory, yet when taken with the fact that no one of them has failed in getting relief by *counsel* in the item of dress, they make this subject worthy of consideration.

It is not my object to discuss the treatment of symptoms, or the surgical management of nasal structural changes resulting from the persistence of this affection.

Let me ask, only, if it is best to *suppress* these peripheral manifestations by the use of cocaine, or the thermo-cautery? May not the affection, in such event, indicate its presence in some other and more serious way: in *petit mal*, for instance?

Is it not more exact and more scientific to find and remove such basal cause?

Washington, D. C.

EDITORIAL.

PASTEURISM.

At a recent meeting of the Academy of Sciences, in Paris, M. Pasteur presented in a communication to that body his latest conclusions as to the methods and results of anti-rabic inoculations. During the year ending November 1st, 1886, only three persons died in the hospitals of Paris from hydrophobia. Of these two had not been treated by Pasteur's method, and the third had been subjected to a form of treatment since abandoned as insufficient. During the previous five years sixty persons had died in the hospitals, and during the year ending November 1st, 1885, thirty-one had died. In all, 2,190 persons were treated during the year. In France and Algeria, 1,700, of whom ten died. It is not certain that every one of these persons was bitten by a rabid animal, but as M. Pasteur very justly remarks, it is almost certain that the larger portion of individuals bitten were subjected to treatment, and yet there were known to have been seventeen deaths from hydrophobia in France and Algeria in addition to the ten of the 1,700 cases treated. Taken together, these facts seem to demonstrate the efficacy of the treatment. Grave doubts have been entertained as to the safety of inoculations such as Pasteur has practiced. It has been thought that the introduction into the human organism of an emulsion of the spinal cord of an animal, dead from such a disease, in the light of what we know of infection and septic processes, must be dangerous. In answer to such an objection Pasteur points to his more than 2,000 cases in a

single year, with not a single accident. The failures he attributes to the fact that the process has been too slow. When the wounds are upon the face, the most dangerous location, or are deep upon other parts of the body, he proceeds to repeat the inoculations, commencing with cords of twelve days, say at 1 P.M., of ten days at 4 P.M., and of eight days at 9 P.M. On the next day he operates with cords of six, of four and of two days at the same hours. The third day he inoculates with the cord of an animal dead only one day, that is with a practically fresh cord. This process is repeated, commencing with a cord of eight days, and coming down to the fresh cord again, and in this way, to use his own words, "there are made three treatments in ten days, carrying each one to the fresh cord." He believes some, at least, of his failures have been due to the fact that the inoculations have not been made with sufficient frequency, or, in other words, the fresh virus has not been reached early enough.

There seems to be no longer room for doubt as to the fact that this process does prevent the development of rabies in the human subject bitten by rabid animals. Animals inoculated with the rabic virus are also protected by *Pasteurism*. The explanation of this fact, however, is still to be sought. Neither chemistry nor the microscope has revealed the morbid agent or thrown light upon what seems to be a curious fact, namely, that the repetition of the virus produces an arrest of the incubating process. This is not homœopathic, but idiopathic. It would seem that the poet's lines,

"Shallow draughts intoxicate the brain,
Drinking largely sobers us again,"

literally becomes true.

THE TUBERCLE BACILLUS.

In quite a large number of cases of tuberculosis and chronic bronchitis the greater portion of the sputum is produced by the mucous membranes, and the Bacillus Tuberculosis, though present, either is not found, or is found only after a long search. In the *Berliner Klin. Wochenschrift* for October 18th, 1886, Biedert suggests the following method by which time is saved and greater certainty reached :

A dessert spoonful of the sputum is mixed with a dessert spoonful of water and 15 drops sodic hydrate. This is boiled till the sputum is all dissolved, when 4 dessert spoonfuls of water are added and the whole again boiled until a homogeneous fluid with only a few floating particles is obtained. If, when cold, the solution is not perfectly thin, 3 to 6 dessert spoonfuls of water are again added. The whole is then put into a conical glass and allowed to stand from two to three days. By this time the bacilli, if present, have fallen to the bottom of the glass. The supernatant fluid is carefully drawn off and the deposit in the bottom will contain all of the bacilli in the whole mass of sputum used. A small quantity of egg albumen may be added to the deposit for the purpose of fixing it to the cover glass during the process of coloring. When the bacillus is not found by the ordinary methods in suspected cases this procedure may help largely in reaching a correct diagnosis.

ZONULAR CATARACT AND DENTAL MALFORMATIONS.

The October number (1886) of the *Ophthalmic Review* contains an article on "Zonular Cataract and Dental Malformations," by John B. Storey, M.B., F.R.C.S.I., in which he calls attention to the frequency with which dental deformities occur in this form of cataract. He quotes the views of Professor Horner and Professor Arlt as to the causes which produce these defects in the lens and the teeth. It is stated that Professor Horner believed that the connection between zonular cataract and the peculiar dental malformations which so frequently accompany it, is due to the influence of infantile rickets, and that Professor Arlt is of the opinion that it was due to infantile convulsions. Out of sixty-five cases of zonular cataract mentioned by Horner and Arlt, forty-eight had a history of infantile convulsions, and in Horner's thirty-six cases, twenty-five had dental defects, sixteen had malformed crania, and four had imperfect mental development.

Mr. Storey also reports nine cases, in corroboration of Horner's observations, six of them with marked dental defects. In describing the malformations of the teeth he says "the dental deformity must not be confounded with that ascribed by Mr. Hutchinson to congenital syphilis. It is, on the contrary, precisely similar to what Hutchinson has attributed to the use of mercury in infancy, * * * which, by setting up stomatitis, produces the dental abnormality."

It is extremely difficult to distinguish between the characteristic features of dental malformations ascribed by Hutchinson to the effects of inherited syphilis and those due to the effects of the prolonged administration of mercury in early infancy.

The semi-lunar notch found in the cutting edges of the

permanent upper central incisors, "the test teeth," has been considered as diagnostic of inherited syphilis, but inasmuch as it is unusual to find such cases in which there is not also the history of mercurial impression, it requires strong evidence to enable one to assert that such defects, in the development of these teeth, can be the result of no other cause than syphilis.

The teeth which are most often defective in development are the first permanent molars and the six anterior teeth, viz.: the incisors and cuspids. Calcification begins in these teeth during the first two years of life, or, to be more precise, in the molars, at birth, in the incisors during the first year, and in the cuspids during the second, and this is the period when the impress of disease is most marked upon the developing teeth.

Syphilis seems to have a special predilection for the tegumentary system, and often acts with great virulence upon these tissues. As the teeth are a part of this system, we can the more readily understand how nutrition of the gums of these organs would be for a considerable time perverted, and result in defective development.

The too common use of large doses of mercury in certain infantile disorders, the long-continued administration of the drug which is necessarily practiced in the treatment of syphilis, lowers the vital forces and produces a depressing effect upon the nutritive functions. Cases could be cited of results from the administration of this drug and other influences in which syphilis undoubtedly did not exist, that would make it impossible from the teeth alone to determine that the results were not due to the syphilitic virus.

On the other hand, the malformations of the teeth described by Arlt as due to infantile convulsions, by Horner to infantile rickets, and Hutchinson to the effects of mercury, cannot in

many instances be distinguished from those due to the influences of the eruptive fevers, typhoid fever, or in fact any disease sufficiently severe in its character to markedly disturb the nutritive processes.

Careful observation will bear out the statement that any influence, no matter what, which depresses or arrests the process of nutrition during the calcification of the teeth, leaves upon them the indelible evidence of defective development, and the more prolonged and severe is this depression of function the more marked are the defects: while a correct knowledge of the periods at which calcification of the various permanent teeth begins and terminates, furnishes data from which a very reliable estimate may be made as to the time—at least to within a few months—when the disturbance to nutrition occurred.

SOCIETY REPORTS.

CHICAGO MEDICAL SOCIETY.

Stated Meeting, November 1st, 1886.—E. J. DOERING, M.D.,
PRESIDENT, in the chair.

PROFESSOR ALBERT E. HOADLEY read a report of five cases of stricture of the rectum, with remarks on the treatment of the more severe forms, which appears in full in another part of the MEDICAL JOURNAL AND EXAMINER.

DISCUSSION.

DR. J. FRANK thought that if the author had divided his paper into relief for malignant strictures, and treatment for non-malignant strictures, it would have been a better classification. He had not had much experience with malignant strictures, but had divided one in the manner described by the author, by cutting down through the cellular tissue. He thought there was little danger in performing the operation, and was surprised at the small amount of hæmorrhage. But the benefit from the operation lasted only for a short time; there was relief at first, but in six or eight weeks the same symptoms returned. Even in extirpated cancerous growths, as far as his information went, they generally return within a year. He had had one case in which the whole cancerous growth was extirpated, but in six or eight months it commenced to return and in a year's time the patient died with cancer. He thought that in dividing the strictures care must be taken not to go too far up the bowel, or too deep, as the peritoneum might be cut into.

PROFESSOR HOADLEY, in closing the discussion, said: Dr. Frank suggests that we be careful in dividing the strictures high up; if we do not divide them higher than we can reach with the finger, dividing them in the posterior line, there is little danger of opening the peritoneal cavity. The peritoneum does not come down, as a rule, where it can be reached with the finger. In regard to hæmorrhage, those cases sometimes bleed profusely even though they are divided right in the median line, where we least expect to find blood vessels; the tissues become vascular, new vessels form, and it is necessary to tampon the wound, and in doing so it is best to put in a tube to relieve the bowels of gas. The suggestion made in reference to the division of the paper is quite proper; perhaps it would have been better to have said, report of cases illustrating a treatment. The treatment is palliative in malignant strictures, and in non-malignant strictures sometimes effects a cure. In answer to the question, "How many inches up may we go?" it is a rather difficult matter to reach the peritoneum of the posterior wall of the rectum with the finger, even if the sphincter is divided; one can reach about four inches with the finger by pushing hard; it would be unsafe to divide a stricture further than one could reach with his finger. Even the inferior mesenteric artery (superior hæmorrhoidal) comes down sometimes, before it bifurcates into the lateral branches, within reach of the finger, and may be divided, but that is no drawback to the operation, because one can put a tampon into the rectum so firmly that all hæmorrhage can be perfectly controlled, and on the next day one may remove about half of the tampon to relieve tension, and the remaining half will tumble out itself three or four days later. It

has been his experience as well as that of others that the vessels there can be controlled with the tampon very securely and with perfect safety. It is best to prepare for it and always tampon where one makes that division, because moderate hæmorrhage is sometimes quite persistent.

DR. A. J. OCHSNER read a report of a case of actinomycosis, which appears elsewhere in this number of the JOURNAL AND EXAMINER.

DISCUSSION.

PROFESSOR R. H. BABCOCK said, the case is one of exceeding interest from its rarity, and particularly as it is a case occurring in this country, and one of very few that have been recorded, and in this case the diagnosis is so unquestionable that the interest is all the greater. We know that in cattle the disease is manifested by tumefaction in various organs, whereas in human beings it is by suppuration and metastatic abscesses. The disease in the human being may affect any of the organs, not merely the lungs, but particularly the viscera of the abdomen. He inquired of Dr. Ochsner if there are signs of the disease having attacked other parts of the body than those mentioned, any symptoms which lead him to infer that the digestive organs or the stomach are infected.

DR. R. TILLEY said, this is certainly one of the most interesting questions that has been brought before the society for a considerable time. In the case presented to-night the disease seems to have originated in the antrum, and is therefore especially interesting to those engaged in treating affections of the nose and throat, and of the teeth. As in the history of this case there was a considerable amount of pain associated with the eyes, it is of interest to the ophthalmologist, and as it is now associated with the lungs, it is of interest to those

engaged in the study of affections of the lungs. As this case, together with the last case presented to the society, in all probability constitute the only indisputable cases that have appeared in English literature, he believed it would be of sufficient interest to the society to ask Dr. Ochsner to carry the investigation still further and try to produce the disease by inoculation on one of the lower animals. He would move, at the proper time, that the society place at Dr. Ochsner's disposal the necessary funds, and he would suggest that Dr. Ochsner accompany his report with a diagram of the fungus as it appears under the microscope. He had looked at the various schematic sketches that are published, and he claims that it would be absolutely impossible for anyone with only the information afforded in these articles, without further study, to diagnose the fungi as they appear in the specimens presented. In Dr. Belfield's book, the diagram is more in correspondence with those we see to-night, but those that are in Councilman's article in Wood's Reference Handbook certainly do not present such an appearance.

DR. J. D. SKEER inquired as to the condition of the lung at the present time, whether cavernous or indurated.

DR. FRANK BILLINGS endorsed the remarks of Dr. Tilley, and thought the society should afford Dr. Ochsner means to carry on the investigation. It is not quite settled how this fungus is carried from one tissue to another; in one case it has been proven that it was carried to the heart by ulceration into one of the jugular veins, and it is known that it will spread through contiguous tissue as through the diaphragm from the pleural cavity to the peritoneal cavity. A pure cultivation of the fungus has been made at Berlin.

DR. HAROLD N. MOYER said there is great uncertainty as to the manner in which the fungus obtains access to the tissues.

He would ask Dr. Ochsner if there is anything in the history of this case that would clear up that point. Two very interesting cases have been recently reported, in one case lung actinomycosis was diagnosticated during life, and after death of the patient a large actinomycotic mass was found in the lower portion of the upper lobe of the left lung, and in the center of the mass a piece of tooth was found. Israel (Center. Bl. f. d. Med. Wesseusch) demonstrated actinomycosis in the sputum of that case, and so far as he knew it is the only case on record in which a diagnosis was made from the sputum. The other case bears on the manner in which the fungus obtains access to the tissues and is reported by Soltmann (Jahrb. f. Kinderhkde). A child while at play swallowed a head of what is known as fox-grass, which was followed by severe pain, difficulty in swallowing, and difficulty in respiration. In a few weeks the head of grass was discharged in an abscess at the left of the vertebral column. In less than six months this case developed actinomycosis. The theory of Israel regarding the first case is that the parasite was carried by the piece of tooth directly into the lung. In the second case the fox grass undoubtedly carried it directly into the mediastinum, which was followed by secondary involvement of the tissue of the lung.

PROFESSOR W. T. BELFIELD said, he would like to say in reference to Dr. Tilley's proposition, that experiments on the cultivation or transmission of this fungus ought to be made from fungi obtained from animals and not from man; if from the latter, from pus taken from abscess cavities around the jaws. The reason is that fungi obtained in the sputum are far more delicate in appearance and for preservation. He has found that after a few days they disappear, or at least are extremely hard to find, and it is stated by those who

have had a great deal of experience that the fungi obtained from the sputum are not so robust as those obtained from cattle or from pus-cavities, aside from the air passages, in man. In justice to Dr. Shirmer, he would say that in the case reported by him, the fungus was recognized in the sputum and a diagnosis of lung-actinomycosis was made.

DR. R. TILLEY said, the question with him was not that of producing the best possible sample of the fungus, but to place cases in question beyond dispute and give the society further opportunities of studying the question. Necessarily American physicians must be ignorant of the question as a whole, because it is impossible to get that accurate information from literature that we can get from the study of the manifestations of the disease. He would not discriminate between this case and that of Dr. Schirmer; on the contrary, if there is a probability of developing the fungus from pus, and an animal is chosen, he did not think there would be any objection to taking samples from both cases to inoculate the same animal.

DR. OCHSNER in closing the discussion said, as far as we know at present there is no evidence of the existence of actinomycosis in any other portion of the body; the probable reason of this is the fact that the patient has been exceedingly careful never to swallow any of the discharge from the abscess or any of the sputum. The accumulation of the fungus in the lungs is probably not sufficient for ulceration to have taken place into any of the other organs. The amount of sputum during twenty-four hours is between one and two ounces, and some days there will be one or two of these accumulations of actinomyces of considerable size and a few very small points, and on some days it is impossible

to demonstrate actinomycosis. On Saturday there were a dozen quite large accumulations and quite a number of small ones; so that judging from the number we find in the sputum, and from the physical signs, which are a decrease in the motion of the left side, mucous râles, and very slight dullness on the left side above the fifth rib, the accumulations are not very great, and we do not find any signs of the existence of actinomyces in any other organ, which answers also Dr. Skeer's question concerning the condition of the lungs at present. Concerning the access to the tissue, the patient had teeth removed from the left side of the upper jaw a number of times, during which time he was constantly handling animals suffering from lumpy-jaw, which is the same as actinomycosis in man, and constantly handling objects that came in contact with these animals. Another point of interest which might give us some light as to the possible introduction of actinomycosis in man is this: The patient told him that on the farm whenever one animal has lumpy-jaw, a number of animals are very likely to have it soon after. This happens generally in the spring of the year, or late in winter, when animals are likely to rub their necks on the fences. He thinks these animals with lumpy-jaw rubbing their necks on the fences are likely to leave some of the actinomyces and the healthy animals are likely to scratch their skin and break the hide, and in that way become infected. The plants are exceedingly small and could with great ease be introduced into the mouth and the cavities of the teeth, or into the jaw from which teeth had been extracted. Drs. Ross and Robison are treating the patient at present by means of the pneumatic cabinet, introducing into the lungs 1-1000 solution of bi-chloride of

mercury. It seems that more of the actinomyces have been coughed up since this treatment began, but it has been of such short duration that nothing certain can yet be said.

THE COMMITTEE ON PATHOLOGY

reported through Professor W. T. Belfield the examination of the case of actinomycosis hominis presented to the society on September 6th. The patient is a man about twenty-five years old, emaciated and feeble. The lateral diameter of the neck is considerably increased by inflammatory thickening of the superficial cervical tissues, which are hard and unyielding; on either side of the neck is a jagged scar and small fistulous opening from which issues a slight serous discharge. The jaws could be separated to only a slight extent; but so far as could be determined, the mouth and throat presented nothing abnormal; no carious teeth were detected.

Dullness on percussion and broncho-vesicular breathing were found over the apex of each lung; on the left side in the supra-clavicular region and first intercostal space anteriorly; on the right side down to the third rib.

The patient coughs frequently and occasionally raises considerable sputum. About an ounce of sputum was collected from which slides were prepared and several specimens of actinomyces were detected.

On September 28th an incision was made in the left side of the neck, giving exit to a small quantity of pus, containing actinomyces. It was the opinion of Professor Belfield that this patient is the subject of actinomycosis.

Professor Belfield said that he had been informally requested by the President to examine the case presented by

Dr. Ochsner, and had found the patient exactly as described. He thought there was no question about the genuineness of the specimens exhibited. The diagnosis rested altogether on the detection of the fungi in the sputum, because if that were absent the physical signs might be due to some other cause, but he thought the physical signs in this case were caused by the fungi in the lungs.

On motion of Dr. Tilley the sum of fifty dollars was appropriated for the purpose of making a series of experiments with actinomyces.

THE CHICAGO SOCIETY OF OPHTHALMOLOGY AND OTIOLOGY
met on June 8th at the Tremont House. E. L. HOLMES,
M.D., in the chair.

Dr. H. M. Starkey presented three cases of congenital ectopia lentis, with the following histories:

1. Mrs. Joseph Peltier, widow, age forty-four. Congenital ectopia lentis of both eyes, and the mobility of the eye-balls slightly diminished. Tension normal in both eyes. Right eye—the lens was cataractous. Vision=perception of light. Left eye—Vision=20-200 with + 5.5 D.=20-50. Ophthalmoscopic examination showed the fundus to be normal. Accommodation was nil. Lenses dislocated upwards and backwards. The irides and the lenses were quite tremulous. The patient was given + 5.5 D. for the distance, + 9 D. for close work.

2. Gertrude Peltier, a daughter, age sixteen. Double ectopia lentis, backwards and upwards, with tremulous irides and lenses. Her general health was good. There was slight photophobia. Vision—right eye, 4-50 with + 7 D.=

20-30; left eye, 2-50 with + 7 D.=20-70, and the accommodation of both eyes=0. Tension was normal. On ophthalmoscopic examination the fundus was found to be normal. She was given + 7 D. oc. u. for distance, + 12 D. oc. u. for reading.

3. Aaron Peltier, a son, age seven. Both lenses were dislocated upwards and backwards. Tension was normal. Ophthalmoscopic examination showed the same. Mobility was impaired, irregular and discordant. Accommodation=0. Vision—right eye=20-120 with + 8 D.=20-60; left eye=20-120 with + 8 D.=20-50. Prescribed + 7 D. oc. u. for distance. Another son, aged sixteen, had been examined by Dr. Boerne Bettman, who found both lenses likewise dislocated (upwards). The boy's vision was materially improved by a + 8 D. lens for each eye.

After an examination of these interesting cases by the members of the society, Professor W. T. Montgomery read the following papers:

OPERATION BY LIGATURE FOR ENTROPION OF LOWER LID.

About two months ago, an old man came under my care who was suffering from complete inversion of all his eyelids and marked narrowing of the palpebral fissures. These conditions had existed for a considerable time, so that the patient was almost blind from pannus. Under ether I made canthotomy on both eyes and Hotz's operation on both upper lids, intending to make this latter operation on both lower lids. Owing to the tediousness of the Hotz operation and to the fact that it is not nearly so effectual in correcting entropion of the lower as of the upper lid, it occurred to me to try the effect of a ligature introduced as follows: A strong curved needle was threaded with number 9 surgeon's silk and introduced at

a point four to five millimeters below the puncta and passed deeply through the tissues of the lid and brought out at a point four to five millimeters below the outer extremity of the lid. The included tissue was then firmly ligated. The inverted lid was completed everted but the ligation produced such an unsightly puckering of the lid that I was tempted to remove the ligature, but did not. Both lower lids were treated in the same manner. The ligatures were removed on the third or fourth day, or as soon as suppuration began, and the unsightly puckering soon disappeared, the lids assuming a natural position. This patient remained under observation about one month and there was no appearance of return of his entropion. I have made the operation about fifteen times with very satisfactory results so far. It has only failed in correcting the entropion in one case, and this was such an aggravated case that I was not surprised at failure at the first attempt. I ligated again, and the lid is now everted. The effect of the ligature is modified by the amount of tissue included. It is too early yet to speak assuredly of the ultimate success of this operation. I have not the temerity to call it new. I can only say it is new to me, and being so very simple, if it is even as successful as other operations in correcting entropion of the lower lid, it commends itself.

He then exhibited a patient with the following history:

Eugene Darust, age twenty-seven, baker, ten years ago received a blow on the left eye with the fist or some blunt instrument which knocked him down. In falling, the left temporal region struck the flat surface of a stone. Considerable swelling and ecchymosis of the lids followed these injuries, but soon began to clear up, and in a short time there was only a slight thickening of the lids remaining. This

slight thickening did not noticeably change until about three years ago, when it began to gradually increase and the surface to assume a knotty appearance. The trouble, though slowly increasing, had not given the patient any inconvenience, except its unsightly appearance, up to the time I first saw him, on December 4th, 1885. At this time the upper lid was so much thickened that there was almost complete ptosis. The external surface presented a markedly nodular and purple appearance, due to varicose enlargement of blood-vessels; on the inner surface of the upper lid near the external angle was found a varicose nodule, the size of a pea. The entire palpebral conjunctiva presented an engorged appearance. The lower lid was also considerably thickened by the varicose engorgement. Decided pulsation was felt over the entire upper lid and extending into the temporal region on this side, but was most marked over the outer angle of the orbit and over the supraorbital foramen. Firm pressure at these points arrested pulsation in the lid and lessened the vascular engorgement. I informed the patient that I thought an operation, ligating the principal branches of the anterior temporal artery and the supraorbital artery, with the free use of the electrolysis needle, would relieve him; but was not certain of effecting a cure by these means, though I endeavored to impress upon the patient the importance of the affliction and urged the immediate necessity of the operation. I did not see him again until May 9th.

He then stated that three weeks previous the noduli on the inside of the lid ruptured and he almost bled to death before the hemorrhage was stilled. Dr. J. J. M. Angear, who was called to see him at the time, has since informed me that he attempted to ligate the main branch of the tem-

poral subcutaneously, but as this did not check the bleeding he ligated the ruptured vessel on the inside of the lid. Dr. Angear was of the opinion that the varix was largely supplied by branches of the lachrymal artery, and that ligation of the common carotid would have to be made. At the time of the second visit of the patient the condition of the lids was not materially changed, but the patient was still anæmic and weak from loss of blood. I advised the operation which had been urged in the first place, but warned him that it might not prove successful, and in that case ligation of the common carotid would have to be made. The patient acquiesced. On May 11, under ether, four subcutaneous ligatures, one including the pulsating branches of the supraorbital, and three along the course of the temporal branches, were applied. The first of these was introduced at the outer rim of the orbit, and the other two at intervals of one-fourth of an inch towards the temporal region. After the sutures were introduced pulsation was only detected at the outer extremity of the lid in a small area. A fine electrolysis needle was then inserted about a dozen times in different directions through the engorged tissues of the upper lid. Cold water dressings were applied, and the patient was ordered to be kept quiet in his room and friends were warned of the possibility of secondary hemorrhage. Considerable reaction followed the operation. The ligatures had all come away by the end of twelve days without any hemorrhage, and by the end of three weeks the swelling had subsided to a degree less than existed before the operation. The surface of the lid is now smooth. Pulsation is still felt over the outer rim of the orbit and the eye-lids are still much thickened. On June 1 electrolysis was again freely used

without employing an anæsthetic, and but little reaction followed.

At present, June 8th, the lids have not entirely recovered from the last operation, but I think it is safe to say that it will be followed by further improvement.

It is still a question as to whether a cure will be effected by the means instituted. I present the patient for your inspection and advice. I am encouraged to give further trial to electrolysis. We all know that ligation of the common carotid is a hazardous operation, and is not always successful in curing aneurisms about the orbit. There is no doubt about the aneurism in this case, starting from the injury of ten years ago, and it is my opinion that the injury was primarily directed to the branches of the middle temporal. It was upon this opinion that my hope of benefiting the patient by the treatment detailed was based.

The third annual meeting of the society was held on October 12th, at the Tremont house, F. C. Hotz, M.D., in the chair.

The following officers were elected for the ensuing year:

President, Dr. E. L. Holmes; vice-president, Dr. Lyman Ware; secretary and treasurer, Dr. Boerne Bettman.

Dr. F. C. Hotz then read a paper entitled

THE RATIONAL TREATMENT OF PATIENTS AFTER CATARACT
OPERATIONS.

Though the safety of the eye is of prime importance, we must, in our anxiety for the recovery of this organ, not entirely disregard the comfort of the patient, for we have no right to deprive our patients of any comfort which does not disturb the healing process. The usual treatment after cataract operations is anything but pleasant to the patient, and many dread the confinement to bed, and in a dark room, worse

than the operation itself. If it can be shown that such measures are superfluous, they should be abandoned.

When a wound is carefully cleansed and thoroughly disinfected, and its edges are nicely approximated, it will heal by first union, provided the close adaptation of its edges is not disturbed by external violence or by muscular tractions. Rest of the wounded part is the first condition for kind healing. But to rest the eyeball it is not necessary to put the patient to bed; we can secure the necessary rest for the operated eye, i. e., we suspend the functions of the ocular muscles and immobilize the eyelids by bandaging *both* eyes. As long as they are closed they remain comparatively motionless. The bandage over both eyes accomplishes this result just as well whether the patient is in bed or sitting in a chair. The confinement to bed, therefore, is irrational, and the recumbent posture is not only of no advantage, but may even disturb the healing, because it favors the flow of blood to the head; consequently congestion of the ocular tissues is more likely to occur in the recumbent posture than when the patient is sitting up.

The uselessness of darkening the room will be apparent to everyone who will bandage his own eyes just in the same manner as we dress the eyes after cataract operations. The bandage shuts off the light so thoroughly that we will be unable to tell whether the room is light or dark. To the patient it is immaterial, but to his attendant it is a great comfort to have light in the room.

In regard to the dressing there is a difference of opinion: the majority of oculists employing the pads and bandage; some closing the eyelids only by strips of plaster, and others discarding all dressings.

If we dispense with the dark room, we cannot leave the

eyes without dressing, because the winking of the eyelids and the constant rotations of the eyeball would disturb the wound and cause a good deal of irritation.

The plaster strips overcome this difficulty; but they do not give the eye any protection against mechanical insults which might cause a re-opening of the freshly united wound. The bandage with padding of absorbent cotton or any other soft material secures to the eye rest and protection against accidents and is therefore to be recommended as the most rational dressing. The flannel roller is open to the objection of being easily disarranged by the movements of the head on the pillow; but a roller of mosquito netting or Swiss gauze applied wet forms, when dry, an immovable bandage which does not become loose, and keeps nicely adjusted for any desired length of time.

The sensitiveness of the operated eye to bright light is not due to the bandage; it varies greatly in different persons; some even do not show it at all. Where it exists it only shows that the eye has not completely recovered from the effects of the operation though the external wound may appear well healed. With the eyes well bandaged my patients are sitting in easy or rocking chairs, in light rooms, and are even allowed to take an exercising walk in their rooms; they go to bed when they please, and get up whenever they like. I have never observed any complication or accident which could directly or indirectly be attributed to this mode of treatment. The recovery was as rapid and the results as good as under the old-fashioned régime.

ABSTRACTS.

EXPERIENCES CONCERNING ONANISM IN YOUNG CHILDREN. *By* PROFESSOR HIRSCHSPRUNG, *in Copenhagen. Berliner Klinische Wochenschrift, September 20, 1886.*

The author of this paper is convinced that masturbation occurs in very young children, though we may be disinclined to believe it; and that the effects on the organism, and especially on the brain, are much worse than after puberty.

"I will show that masturbation is practiced at a very early age, not only by boys but also by girls, most frequently, according to my experience, by the latter.

"The following typical case occurred lately: A shapely, well-nourished girl, just thirteen months old, of Danish parentage, was brought to me on the 20th of November, 1884. She was the only child; the mother seemed very nervous, the father was healthy. The attending physician could not explain the attacks from which the child suffered.

"The child was said to have been suffering for eight or nine months from its attacks, which were still of a doubtful nature.

"On examination absolutely nothing was to be learned. The child was ruddy, was not rickety, had a normal temperature, normal urine, suffered a little from constipation. It cried continually during the investigation, and became quiet for the first time when the nurse took it in her arms. It grew gradually quiet, and I then observed an attack which lasted for about five minutes. The child lay stretched over the

breast and shoulder of the girl, clinging to her firmly with its hands, one on the servant's back and the other on her breast. Its feet were braced against the girl's abdomen. Now began a series of to-and-fro motions with the pelvis and the legs which were stretched out parallel. The child worked continually, was perfectly still, red in the face, the pupils dilated, grimaces came and went in its face: it sighed and sobbed so that it was supposed to be in pain, and the girl drew it, pityingly, closer to the breast. During the attack I stood close by. The child watched me with a longing, vacant look—the instant before it could not endure me. When the attack was over it loosened its hands and began immediately to cry again.

“The investigation of the genitals before and after the attack showed nothing specially abnormal.

“Such an attack, according to the mother, occurred several times during the day. By night the child was very restless, it was wakeful and fell asleep for the first time only after it had been taken up and given the opportunity to practice its habit.

“I communicated to my Swedish colleague my opinion of the case, and the advice which, of course, naturally followed from it, to remove from the child the opportunity for its vicious practices.

“After a month, I had the pleasure of learning from the father that my advice had borne fruit, but the family physician could not agree with my interpretation of the facts. Nevertheless, in this case, typical means were used, consisting of friction of the genital organs, the irritation being voluntary, and a high degree of sexual orgasm arose; this means nothing else than an intentional, even though igno-

rant arousing of the sexual passion. The vice indeed showed itself at an unusually early period of life, but a counterpart occurs in Kraft's case, cited by Vogel, of a girl eleven months old * * * who irritated the vulva with the hand.

"There is the closest agreement in the appearances seen in girls a little older, though the methods vary somewhat. They may be seen going through their exercise bent over a chair, stool, or something of the kind, the genitals pressed against the piece of furniture, but the typical method is crossing the legs while sitting and making backward and forward motions, with flushed face, staring eyes, great anxiety until the culmination. The case often ends with a sigh and collapse. The procedure is repeated whenever the opportunity is offered, often several times a day, perhaps also at night, many times quite typically in sleep.

"In 1884 I had such a girl under observation in the hospital. She was born October 10th, 1881, and was at the time of her reception not yet quite three years old. She belonged to a neurotic family,—father and uncle had committed suicide,—and she was the only child.

"She was in every way well developed, was large for her age, but thin and anæmic, very active, somewhat restless in her manner. Since the age of one and a half years she had had attacks which were explained as pruritus of the genitals. She had visited the 'Poliklinik' of the hospital, but without result, because the supervision on the part of the nervous mother was not stringent enough, therefore she was brought to the hospital. During a considerable portion of the forty days of her stay in the hospital she was kept in bed, with her legs stretched out and bound fast to its sides. She was quite well, but was constipated, and somewhat rest-

less during her sleep. After getting out of bed there were several beginnings of an attack but nothing more."

The author mentions another case of a girl of eight, still under treatment, who has masturbated since her third year. "These cases, with three or four more, in age from one to eight, complete the list. When one can look over such a list he will be more firmly fixed in the opinion which I state positively that the cases occurring earlier in life belong to exactly the same class as the latter."

* * * * *

On account of the attendant erections the diagnosis is easier in males, but such cases are rare, he having seen only three cases in young boys.

"A sixteen months old boy came to the 'Poliklinik' on July 30th, 1878. He was small, thin, with fontanelles still open the head very large; he had twelve teeth and could walk when supported. The mother said that since his eighth month he had been observed daily in the following condition,—of late this had occurred oftener: He sits upright, bent a little forward, with his body moving back and forth, penis erect, cries when disturbed, and at last is bathed in a profuse perspiration. After the attack, which may last for half an hour, he falls into a complete stupor. For a month he has been growing thin, has diarrhoea and a poor appetite. Worms have not been noticed. Cold packs were advised. August 2d—Up to this time he has had only two attacks, and these were quickly overcome by cold water.

"There can be no doubt that masturbation in small children does not belong to the things of daily occurrence, but on the other hand, it does not occur so seldom as to escape the observation of a busy pædiatrist, nor must it in all cases be the result of false observation." * * * In works

on children the subject is usually only hinted at. "Vogel, I have already stated, mentions the fact, but the most detailed description is in *Steiner's Compendium der Kinderkrankheiten*, 1872. In the chapter on 'Onanism' he says: 'Concerning the age in which this vice is practiced, I have often noticed that it may be detected in very small children—from one to two years of age.' And he here remarks that in nurslings, after weaning, the sucking of the finger, which is so frequent, often occurs along with erection, great redness of the face, increased brightness of the eyes, and, finally, an outburst of perspiration. This remark certainly for the first time gives to it an ætiological meaning and is, according to his opinion, a plain indication of sexual irritation. Steiner does not believe that these occurrences take place in children at the breast." * * *

Dr. Lindner, of Budapest, amplifies the same thought. In a note the author refers to the article by Dr. Jacobi on "Masturbation and hysteria in young children in the *American Journal of Obstetrics and Diseases of Women and children*, 1876," which he has only seen in abstract. He has himself not seen such cases, but he calls attention to the exact agreement of Steiner and Lindner, and advises the physician to have a watchful eye upon the movements of children while nursing.

"As to my own cases, I will emphasize a distinct impression that I have had that great nervousness, or even decided mental disease, exists in the nearest relatives of these children and doubtless may play a part as a predisposing force.

"In the next place, I have had the impression that relatively many children observed by me have suffered with habitual constipation. I have been still more convinced of the importance of this symptom since my acquaintance with a

case which Dr. V. Mohr, of Copenhagen, a few years ago, made the subject of a communication to the medical society of that place.

“He met a girl, three and half years old—again a girl—that had, for some time past, suffered with constipation. Lately she had begun to masturbate. She braced herself with her arms against a table and rubbed the thighs against one another. The mother said that for the whole day and evening, until she went to sleep, she did hardly anything else. Scarcely had she come into Mohr’s room when she began her practice. The labia majora and minora were somewhat reddened, no fissure in the anus but a tension on account of which Mohr dilated the anus with his fingers. The operation removed the constipation as well as the masturbation. After eight days the old constipation began again, so that the operation had to be repeated. The child was then for three weeks very bright, then relapsed again, afterwards she recovered, and, at this time, apparently radically.

“I cannot pass over a badly itching attack of urticaria or of lichen, which may be such a great torment of children and is so difficult to remove. These troubles may be the first inducement to handling and friction, and may have onanism as a result.”

“I have four times heard ascarides mentioned, but their meaning as a causative force I have not been able to understand.” * * *

When Bouchut mentions “*prurit de la vulve* as a frequent cause of onanism I am unable to form an opinion of my own concerning the independent existence of this symptom.

“Instruction by others, which is certainly the most common

cause with boys and girls in later years, I may, fortunately, in the first years of life pass over." * * *

"The greatest care must be exercised to discover the cause, and the greatest watchfulness 'early and late, day and night,' must be used to prevent the practice; consequently such patients are usually better treated in hospitals."

LESTER CURTIS.

COCAINE INTOXICATION.

Dr. Commanus, Berlin,* describes a case of cocaine intoxication. The patient had contracted the morphine habit in seeking relief from hemorrhoids, and used cocaine as a substitute for morphine. He began with 0.05 grm. of muriate of cocaine three or four times daily. The remedy at first gave him real comfort without producing after effects worth mentioning. According to his account he enjoyed an alleviation of his hemorrhoidal difficulty and had a stool every day, which was not the case when using the morphine.

He finally reached doses of 0.5 to 0.8 grm. daily, when he began to suffer with "a poor appetite, ringing in the ears, occasional shortness of breath, and hallucinations in respect to the senses of sight and hearing." These symptoms he learned how to remove by small doses of morphine.

During an attack of herpes zoster he used doses of from a gramme to a gramme and a half daily for two or three days. Then followed "trembling of the limbs, relaxation of the muscles of the body, peculiar and rapidly extending

* Berliner Klinische Wochenschrift, September 20th, 1886.

changes of the finger and toe nails, loss of appetite and sleep, very great agitation, strong hallucinations in the departments of the nerves of sight, smell and hearing; intensely injected conjunctivæ; a staring look. The patient fired several revolver shots at the objects of his hallucinations. He attacked his servant in order to force out of his mouth a lantern which was concealed there." These symptoms are seen to resemble those of delirium tremens. They were relieved in two or three days by small doses of morphine.

Dr. Mærkel,* also gives some warnings as to the danger of using cocaine.

Among these is the "significant sleeplessness lasting up to six hours after the cocaine injection."

He doubts, however, the danger of forming a cocaine habit, like the morphine habit, because he does not believe that cocaine is a pure nervine as morphine is. It produces its effect first through the nutrient grandular system, which it stimulates, causing an excess of nutrition to flow to the nerve centres. His reasons for this opinion are that after the use of cocaine, a certain amount of salivation is always produced. There always follows a swelling of the lymphatic glands in spite of the most careful antiseptic precautions; even the mammary gland is sometimes affected in the male. This result is more marked on the side which has received the injection.

The appetite is always increased as after a drain upon the nutrition.

The drug produces not so much a stimulation as a feeling of well-being and elasticity, a disposition to play, as in growing young animals. After the effect has passed off there is no

* Berliner Klinische Wochenschrift, March 8, 1886.

"katzenjammer," as after a debauch, only a return to the usual condition. At the most there is only a feeling of pleasant weakness.

It is in this disturbance of nutrition that he thinks the danger in its use lies. As a partial proof of this view, he states that the cocaine users of Central America always die of phthisis.

LESTER CURTIS.

A PECULIAR FORM OF MOTOR DISTURBANCE OF THE PUPIL
(*Eine Besondere Form von Bewegungsstörung der Pupille*).

By DR. J. SALGÓ, *Central-blatt für Nerven Heilkunde*. October, 1886.

Salgó describes a peculiar form of pupil, which consists essentially of an irregular contraction of the muscular tissue of the iris, by which its pupillary margin assumes many different shapes. The pupil generally appears triangular or poliangular, with the corners thickened and rounded out, resembling somewhat the slit-like pupil of the cat, or the irregular appearance caused by synechia. This kind of pupil reacts in a normal manner, but after each movement assumes a somewhat different form, so that the contracted pupil appears different from the same when dilated.

The great majority of cases so far observed have been associated with general paralysis of the insane, though it has been seen in chronic, progressive psychoses in which no paralysis could be detected. The author considers that it is much the most frequent pupillary symptom in general paralysis, and regards it as an expression of the varying intensity of enervation from the cortex.

HAROLD N. MOYER.

BOOK REVIEWS.

LOCAL ANESTHESIA IN GENERAL MEDICINE AND SURGERY,
Being the Practical Application of the Author's Discoveries. By J. LEONARD CORNING, M.D., pp. 103. New York: D. APPLETON & COMPANY. Chicago: A. C. MCCLURG & COMPANY. 1886.

Nearly everything of value or of interest in this book had first appeared in the medical periodicals of the United States. It is principally a compilation of articles written by other men. It is entertaining and instructive, but the way in which the author forces his own personality upon the reader at every page is inexcusable. The book is one of the most flagrant examples which has appeared, of the growing tendency among certain of the members of the medical profession to attempt to advance their personal interests by exhibitions of egotisms, as is shown throughout this book by the frequent use of the nominative case of the first person singular, and the devising and displaying of needless modifications of instruments.

It has been ascertained that in using cocaine for producing local anæsthesia the following precautions are desirable: 1. The particular sample of the drug used must be a good one. The author prefers that prepared by Mariani, but others seem to be equally good. 2. Strong solutions, particularly about the head, are apt to produce unpleasant physiological symptoms. The author prefers a one or two per-centum

solution. In one case local insensibility was maintained for one hour and a half by the use of a one-third per-centum solution, heated to 99° F. before injection. Heating the solution has been found to increase its anæsthetic power. 3. The best method in using the drug is, to first apply an Esmarch bandage, say in an extremity, up to the lower margin of the region which it is desired to render anæsthetic. Then using a solution of the desired strength, make repeated injections of say two minims, just under the skin, at short intervals of space throughout the area to be anæsthetized. Next apply the bandage above but not over the injected area, and apply the tourniquet. The bandage may or may not be removed below the point of operation. When the operation involves the deeper tissues, the injections of one to three drops each, are to be repeated at successively deeper points as the anæsthesia proceeds, even down to and under the periosteum. 4. The anæsthesia seems to continue as long as the circulation in the part is stopped. A practical suggestion in this connection is, that when large quantities of the drug have been used, the circulation in the part should be re-established gradually. One convenient method for this purpose is to leave an elastic band so adjusted as to retard only the subcutaneous venous circulation.

5. In addition to the use of cocaine in cutting operations, it has been found to be of great service for purposes of diagnosis and reduction of fractures and dislocations. In this class of cases the injections must be carried down to the bone, and the use of the tourniquet is desirable. In the cases reported all pain was abolished and no injurious effects resulted. 6. It is desirable to avoid the puncture of large veins. For this purpose the author uses superficial pressure

enough to retard the venous circulation, and then traces the course of the veins with a soft blue pencil.

A MANUAL OF SURGERY. *In Treatises by Various Authors. In three volumes.* By FREDERICK TREVES, F.R.C.S., Surgeon to and Lecturer on Anatomy at the London Hospital. Vol. I., *General Surgical Affections, The Blood-vessels ; The Nerves ; The Skin.* Vol. II., *The Thorax ; The Organs of Digestion ; The Genito-Urinary Organs.* Vol. III., *The Organs of Locomotion and of Special Sense ; The Respiratory Passages ; The Head ; The Spine.* Duodecimo, 1866 pages, 213 engravings. Philadelphia: LEA BROTHERS & COMPANY, 1886. Chicago: A. C. McCLURG & COMPANY.

This book is a successful attempt to represent the principles and practice of modern surgery in the form and manner most acceptable to the greatest number of practitioners and medical students. It is "Concerned mainly with the Clinical, Diagnostic and Therapeutic Aspects of Surgery." Thirty-three hospital surgeons of Great Britain and Ireland are the "Various Authors" of the fifty-nine treatises" or monographs of which the "Manual" is composed.

The name of Frederick Treves as editor, who himself writes some of the most important articles, is sufficient guarantee that the work is all that it claims to be. Besides the editor, many of the contributors are also well known writers and clinical teachers, while we find a number of new names in the list. All the articles are of a high order of merit. There seems to have been a special effort through-

out to incorporate and emphasize recently established doctrines and methods.

There are not many illustrations, but what there are are mostly original, and always to the point. The "Manual" is destined to become popular both as a text-book and as a book of reference, and to take rank with the standard works on surgery.

A TREATISE ON THE PRACTICE OF MEDICINE. *For the use of Students and Practitioners of Medicine.* By ROBERTS BARTHOLOW, M.A., M.D., LL.D., *Professor of Materia Medica, General Therapeutics and Hygiene in the Jefferson Medical College of Philadelphia, etc., etc.* Sixth Edition, Revised and Enlarged; pp. 990. New York: D. APPLETON & COMPANY. Chicago: A. C. McCLURG & COMPANY. 1886.

In the preface to this edition the author anticipates adverse criticism by announcing, first, that this volume is only one of three which he intends to publish upon the subject of special pathology and therapeutics, and second, that he makes no claim to completeness for his treatment of the various subjects in the book. It is his intention that the treatment of the subjects taken up shall be eminently clinical rather than scientific, and that what he says shall represent his opinions rather than the opinions of other men.

The author says: "In the present edition some new subjects have been introduced, and preliminary chapters have been appended to the chief divisions of the work, to make the study of the diseases of the class more exact."

As a treatise on the practice of medicine the book has two

grave faults. Too little attention is given to the history and pathology of the diseases discussed, and the treatment given represents too exclusively that of the author. And it is hardly enough for him to say in reply that what this book does not contain the other two will. In spite of its faults the book is a fair clinical guide as far as it goes, and the positive nature of the opinions expressed will commend it to some who like to be told just exactly what to prescribe in a given case.

THE HEALING OF ARTERIES AFTER LIGATURE IN MAN AND ANIMALS. By J. COLLINS WARREN, M.D., *Assistant Professor of Surgery, Harvard University; Surgeon to the Massachusetts General Hospital; Member American Surgical Association; Honorary Fellow Philadelphia Academy of Surgery.* One volume, pp. 184, illustrated with twelve full-page plates in black and colors. Parchment-muslin binding. New York: WILLIAM WOOD & COMPANY.

The author claims that this book represents what he has observed in an attempt "to observe not only the behavior of the various tissues concerned in the process of repair, but also the different phases through which the vessel passes from the moment of ligature until the condition is reached after which no further change occurs."

The book is divided into five chapters, viz., History, Experiments on Animals, Human Subject, Closure of the Fœtal Vessels, and Summary. All that the author has to say will be read with interest by pathologists and surgeons, but that which is of greatest interest to the general professional reader is contained in the summary, which is so con-

cisely written as not to permit further condensation. However, mere mention of a few of the conclusions reached will be of interest in this notice of the book. The period of time after ligature to the development of the final scar, varies with different vessels, but in no case was it observed to be less than three months. Another prominent feature observed is the complex nature of the process. Many museum specimens examined had the appearance of union by adhesion, but careful examination did not justify such conclusion. The experiments "seemed to show that the muscular cell is a prominent and essential feature of the arterial cicatrix. The size of the thrombus depends upon *a*, the amount of traumatism, and *b*, the presence of aseptic conditions, it being always present, Senn and Baumgarten to the contrary nevertheless, and large in direct proportion to the amount of traumatism to the artery itself and to the amount of suppuration in the wound. It is probable that an hour or more may elapse before the thrombus has become perceptible to the naked eye.

True progress in the advancement of medical knowledge is made by just such work as this book represents, and the manner and matter of the report is beyond criticism. The paper, printing and binding, and the careful accuracy of the drawing of the illustrations, combine to make the book a **very** handsome and exceptionally fine volume.

1. MANUAL OF DIFFERENTIAL MEDICAL DIAGNOSIS. By CONDUCT W. CUTLER, M.S., M.D. *12mo, pp. 161.* New York: G. P. PUTNAM'S SONS. Chicago: A. C. McCLURG & COMPANY. 1886.
2. LECTURES ON DIETETICS AND DYSPEPSIA. By SIR WILLIAM ROBERTS, M.D., F.R.S. *Second Edition. Small 8vo, pp. ix, 92.* London: SMITH, ELDER & COMPANY. New York: G. P. PUTNAM'S SONS. Chicago: A. C. McCLURG & COMPANY. 1886.

1. This little manual follows the plan, adopted in so many of our recent works, of giving the differential diagnostic symptoms in parallel columns. Thus, under the head of diseases of the mouth and throat, we find œdema glottidis differentiated from croup, thoracic aneurism, asthma and retro-pharyngeal abscess. Again, under acute general disease, we find measles compared with variola, scarlet fever, roseola, and typhus.

The teacher will find this little work useful, as by it he may appeal to the eye as well as the ear of the student.

A few minor errors are to be observed, such as "typhus fever," but in the main the work is reliable, having been compiled from the best sources.

2. This little work is fragmentary. The first lecture deals with dietetics in general, and shows extensive reading and careful thought. The fifth lecture is a valuable monograph on the nature, causes and treatment of acid dyspepsia. The three remaining lectures embody the author's views and experiments on the accessory articles of food, tea, coffee, alcohol, etc., and their relation to digestion. His views are in many respects different from those commonly accepted.

They are, however, theoretically correct, and will doubtless stand the test of practical application. The work is a valuable addition to the literature of dietetics.

The addition of the terms "collagenous," "oligopepsia," and "horrification" to our nomenclature may be regarded as of doubtful utility.

DICTIONARY OF PRACTICAL SURGERY. *By Various Hospital Surgeons. Edited by CHRISTOPHER HEATH, F.R.C.S., Holme Professor of Clinical Surgery in University College, etc., etc.; pp. 1854. Philadelphia: J. B. LIPPINCOTT COMPANY, 1886.*

This book is apparently intended to stand in the same relation to the usual treatise on the principles and practice of surgery in which Quain's Dictionary of Medicine stands to the usual so-called "Practice of Medicine." The editor says that it is intended for the use of men who are too busy to investigate thoroughly the subjects upon which they want information. The surgical affections are described in alphabetical order, except such as it has been found more convenient to group together in a series, as *e. g.*, those of the breast. Abundant cross-references are given. The subjects are treated of in the following order: 1, Cause; 2, Pathology; 3, Symptoms and Diagnosis; 4, Treatment; 5, Prognosis. Each writer has signed his articles and has thus been made responsible for his own statements. The editor has exercised only a general supervision, and has endeavored to exclude crude theories and doubtful practices. There are no illustrations. "The aim of the editor has been to produce a compendium of the practice of British surgery of the present day," and as none of the articles are more than two years old, he thinks that aim has

been fairly attained. In special fields of surgery, as that of the abdomen, for example, the book cannot serve as a complete guide, but for the purpose for which it is intended it is reliable and quite complete. One feature which deserves special mention and commendation is, that many slight ailments which the usual treatise does not mention, but of which a physician frequently wants some additional and reliable information, are carefully and tersely described. The articles on the various skin diseases are a desirable feature and are well written. The book as a whole is to be strongly commended.

E. W.

MESSAGE AS A MODE OF TREATMENT. By WILLIAM MURRELL, M.D., F.R.C.P. 12mo, pp. vi, 78. Philadelphia: P. BLAKISTON, SON & COMPANY. Chicago: W. T. KEENER.

This little volume contains many practical hints on the use of massage, and a perusal of it is well calculated to remove many of the too prevalent errors of the profession, regarding this subject.

It contains an excellent description of the various movements and manipulations employed in using massage, together with suggestions as to the proper choice and necessary qualifications of operators. The portion dealing with the physiological action of massage is defective, and the discussion of the chief therapeutical indications might have been lengthened with advantage.

The work as a whole has considerable value, and those not familiar with the subject can readily obtain from its pages sufficient knowledge to enable them to prescribe this mode of treatment intelligently.

At the close of the work there is an abstract of an article on "Massage and Morals," giving a brief description of some of the methods of the advertising rubber, and reiterating the statement that under no circumstances should a lady or child be treated by any one but a reliable *masseuse*. Those unacquainted with the character of many of the "professors" and "institutes" with which our larger cities are infested cannot be too heedful of this warning. H. N. M.

A MANUAL OF MINOR SURGERY AND BANDAGING. *For the Use of House-surgeons, Dressers and Junior Practitioners.* By CHRISTOPHER HEATH, F.R.C.S. *Eighth Edition; pp. 360, 12mo. Philadelphia: P. BLAKISTON, SON & COMPANY. 1886.*

The date of the preface to this edition is July, 1886. In this preface the author makes only two statements, viz., that the book is intended only for beginners, and that he "can only feel flattered," that the book is favorably mentioned in a certain popular novel. The first edition appeared in 1861, and the reader will to-day be as unable as the author apparently is to give a reason for the appearance of this edition. The chapter on antiseptics is enough to condemn the book, which, in the light of modern surgery, cannot fail to do harm whenever it falls into the hands for which it is stated that it is intended, viz., "beginners."

A TREATISE ON THE PRINCIPLES AND PRACTICE OF MEDICINE.

DESIGNED FOR THE USE OF PRACTITIONERS AND STUDENTS OF MEDICINE. By AUSTIN FLINT, M.D., LL.D., *late Professor of the Principles and Practice of Medicine, and of Clinical Medicine, in the Bellevue Hospital Medical College, etc. Sixth Edition, revised and largely rewritten by the author, assisted by WILLIAM H. WELCH, M.D., Professor of Pathology in Johns Hopkins University, and AUSTIN FLINT, M.D., LL.D., Professor of Physiology in the Bellevue Hospital Medical College.* pp. 1,160. Philadelphia: LEA BROTHERS & COMPANY, 1886. Chicago: A. C. MCCLURG & COMPANY.

It will be a great satisfaction to the admirers of the late Professor Austin Flint, Sr., to know that this edition of his "Practice of Medicine" was revised under his own immediate supervision. Dr. William H. Welch has written the first seven chapters and a large part of the eighth in Part I, and he has also revised and rewritten the description of anatomical characters of the diseases considered in the rest of the volume.

Special attention is called in the preface to the following entirely new articles: Infectious Tumors; Syphilitic Disease of the Lungs; Cerebral Syphilis; General Considerations relating to Inflammatory and Structural Diseases of the Spinal Cord; Spastic Cerebral Paralysis of Children; Hereditary Ataxia; Myxœdema; Multiple Neuritis; General Pathology of Fever and Milk Sickness; "and in nearly every article changes and additions, some of them very important, have been made."

The statement is made that this edition "contains a full consideration of recent discoveries concerning the bacterial origin of various infectious diseases." With Dr. Welch as sponsor for this statement it may be accepted without question.

Five diagrammatic engravings have been introduced in connection with the nervous system. "By careful condensation and rearrangement, and by the rigid omission of obsolete matter, the additions contained in this edition have been accommodated without an increase in the number of pages."

The limits of a mere book notice do not allow a critical consideration of the new matter introduced, and the reputation of the author and his assistant render such consideration unnecessary. The book may be truly considered "the crowning work of his (the author's) long professional life." It may be said to more fairly "represent the existing state of medical science, with respect to those subjects of which it treats," than any other English work. Those physicians who have the fifth edition will want the sixth, and those who have neither ought to have the last.

AN ATLAS OF CLINICAL MICROSCOPY. By ALEXANDER PEYER, M.D., *translated and edited by* ALFRED C. GIRARD, M.D. New York: D. APPLETON & COMPANY. Chicago: JANSEN, McCLURG & COMPANY.

The book has ninety plates, some of the plates having several different sets of figures. The subjects comprise blood, milk, urine, sputum, fæces, vomit, "contents of abdominal tumors," by which he means one plate devoted to an ovarian cyst, "secretion of female sexual organs," and "various micro-organisms provoking disease."

The plates are carefully, sometimes laboriously, drawn, but with a stiffness of hand which shows that the author is not an artist. In many instances, also, they must have been finished

away from the microscope, as shown in the air-bubbles in plate five, which no one would recognize. The text is brief, as such a text should be, but crude and often untrustworthy. For example, one familiar with the subject would not at this day have said, "the relative quantity of the leucocytes to the red corpuscles is 1 to 300" (page 2). Again, the statement that "this form of urethritis [from masturbation] never leads to strictures" (page 102) is not true. See Gross: "Disorders of the Male Sexual Organs."

On the whole, the author has attempted something beyond his strength, but appears to have done his work as well as he could.

The translation is readable, but as a specimen of English is neither elegant nor correct.

The publishers have done their part in good style.

Notwithstanding the faults and deficiencies of the work, it supplies a want, and is worthy of a place in the physician's library.

LESTER CURTIS.

BOOKS RECEIVED.

How We Treat Wounds Today. By Robert T. Morris, M.D. New York: G. P. Putnam's Sons. Chicago: A. C. McClurg & Company. Second edition.

A Treatise of the Principles and Practice of Medicine. By Austin Flint, M.D., LL.D. Philadelphia: Lea Brothers & Company. Chicago: A. C. McClurg & Company.

Massage as a Mode of Treatment. By William Murrell, M.D., F.R.C.P. Philadelphia: C. Blakiston, Son & Company. Chicago: W. T. Keener.

Transactions of the American Surgical Association. Volume IV. By J. Ewing Mears, M.D. Philadelphia: P. Blakiston, Son & Company. Chicago: W. T. Keener.

The Curability of Insanity. By Pliny Earle, A.M., M.D. Philadelphia: J. B. Lippincott & Company. Chicago: A. C. McClurg & Company.

The Functions of the Brain. By David Ferrier, M.D., LL.D. New York: G. P. Putnam's Sons. Chicago: A. C. McClurg & Company.

A Laboratory Guide in Urinalysis and Toxicology. By R. A. Witthans, A.M., M.D. New York: William Wood & Company. Chicago: W. T. Keener.

Eighth Annual Report of the State Board of Health of Illinois.

Thirteenth Annual Report of State Board of Health of Michigan.

Seventh Annual Report of the State Board of Health, Lunacy, and Charity of Massachusetts.



